Draft Environmental Assessment

Gaviota Bridge Replacement

County of Santa Barbara Department of Public Works

FEMA-1203-DR-CA, DSR #52007 and #74695

September 2005

FEMA

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Contract No. EMW-97-CO-0173
Task Order 61

15293557.00100

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APCD	Air Pollution Control District (Santa Barbara County)
APE	Area of Potential Effects
BAR	Board of Architectural Review (County)
BFE	base flood elevation
BMP	Best Management Practice
B.P.	before present
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDP	Coastal Development Permit
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
cm	centimeter(s)
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CO	carbon monoxide
County	County of Santa Barbara Department of Public Works
CUP	Conditional Use Permit
dB	decibel(s)
dBA	A-weighted decibel(s)
DP	Development Plan
EA	Environmental Assessment
EIR	Environmental Impact Report
ESA	Endangered Species Act (federal)
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
fps	feet per second

GSA	U.S. General Services Administration
Hz	Hertz
L_{eq}	equivalent sound level
mm	millimeters
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission (California)
NAVD	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NISTAC	Nationwide Infrastructure Support Technical Assistance Consultants
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	NOAA Fisheries Service
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OES	California Office of Emergency Services
Park	Gaviota State Park
PCS	Personal Communications Services
PM_{10}	particulate matter smaller than 10 microns in diameter
RWQCB	Regional Water Quality Control Board
SHPO	State Historic Preservation Officer
State Parks	California Department of Parks and Recreation
SWPPP	Storm Water Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.1 BACKGROUND INFORMATION

The County of Santa Barbara Department of Public Works (County) has applied to the Federal Emergency Management Agency (FEMA) (through the California Office of Emergency Services [OES]) for Public Assistance Program funding to replace the Gaviota Creek Bridge, located in Gaviota State Park (Park) on the south coast of Santa Barbara County (Figures 1 and 2 [See Appendix A for figures.]). The funding is available under a Presidential disaster declaration (FEMA-1203-DR-CA) for the severe El Nino storms and flooding that affected Santa Barbara County in the winter of 1998. The County proposes to replace the bridge and complete other road improvements during 2006 and 2007.

The road and bridge are owned and maintained by the County and are located in a County right-of-way that crosses the Park. The existing two-lane road descends from an at-grade intersection with Highway 101 along a southerly alignment that leads directly to the State Park entrance (Figure 2). The road and bridge over Gaviota Creek provide access to the State Park and the community of Hollister Ranch.

1.2 PURPOSE AND NEED

FEMA's Public Assistance Program provides supplemental federal disaster grant assistance for the repair, replacement, or restoration of disaster-damaged, publicly owned facilities and the facilities of certain private non-profit organizations. The County of Santa Barbara owns and maintains the Gaviota Creek Bridge, which sustained damage to the as a result of the 1998 El Nino storms and flooding. The purpose of the project is to provide Public Assistance Program funding to the County of Santa Barbara to replace the bridge.

Prior to 1997, the crossing at Gaviota Creek consisted of two 24-inch concrete pipe culverts under the road to convey low flows. During high-flow events, the creek would flow over the road and vehicle passage was limited or precluded. In most years, Gaviota Creek has year-round flow. Summer flows are generally 1–2 cubic feet per second (cfs). However, storm flows can exceed 5,000 cfs during El Nino winters. The County, the California Department of Parks and Recreation (State Parks), and Hollister Ranch have historically maintained the crossing, as feasible. However, the frequency of sediment removal and road repair increased in the 1980s and early 1990s, and acquiring permits to reconstruct the low-water crossing became increasingly difficult.

In 1997, the County Department of Public Works constructed the current bridge over Gaviota Creek because the culverts associated with the historical low-flow crossings were continually being plugged with sediment, causing flows to overtop and erode the road across the creek. The historical crossings provided unreliable access to the Park and Hollister Ranch and impeded emergency access.

The existing 80-foot-long bridge across the creek consists of four railroad flat cars placed side by side across the creek on pile foundations. When the bridge was installed in March 1997, the clearance under the bridge was over 4 feet. The existing bridge was heavily damaged during the 1998 El Nino floods, which overtopped the bridge and washed away approximately 120 feet of approach road on the east side of the bridge. The County repaired the road and removed sediments under emergency conditions and permits. Since 1998, the bridge and portions of the

Park have been subject to additional flood damage in the winters of 2001, 2002, 2003, and 2005. The flooding in 2002 deposited sediment under the bridge, effectively blocking all but low flows under the bridge and forcing storm-related flows to bypass the bridge and flow over the road.

As noted above, the current bridge crossing accumulates sediment and woody debris on the upstream side due to the small opening under the bridge. As sediment accumulates at the bridge site, the channel bed elevation upstream of the bridge is raised above natural levels. Hence, re-establishing a flow line under the current bridge and providing clearance under the bridge have become impossible. At this time, the current bridge only allows low flows (about 1 cfs) to pass under the bridge deck. Winter flows now overtop the road north of the bridge in a depression in the road that was exacerbated by the 1998 and 2005 flood damage.

The current unreliability and inadequacy of the crossing at Gaviota Creek provide the need for action. Gaviota State Park visitors and employees as well as residents of Hollister Ranch are affected by the current state of the crossing. Therefore, action is needed to provide year-round, reliable access to the Park and Hollister Ranch to meet public health and safety needs.

1.3 ENVIRONMENTAL REVIEW

FEMA has prepared this Environmental Assessment (EA) to evaluate the impacts of the project in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 of the Code of Federal Regulations [CFR] Parts 1500, 1508), and FEMA's implementing regulations (44 CFR Part 10).

FEMA will circulate the Draft EA for a 15-day public comment period. The public will be notified of the availability of the Draft EA by means of the FEMA Web site, direct mailing to interested parties, and a public notice in the local newspaper. FEMA will consider public and agency comments on this Draft EA and then prepare a Final EA. After considering the comments received and the analyses in the EA, FEMA will determine if a Finding of No Significant Impact (FONSI) is an appropriate decision document for the project.

The County is the Lead Agency for the project under the California Environmental Quality Act (CEQA), and prepared and circulated a Draft Environmental Impact Report (EIR) in June and July 2005. In the fall of 2005, the County Planning Commission and Board of Supervisors will conduct public hearings to certify the Final EIR and consider approval of the project, including approval of a Conditional Use Permit (CUP) and Development Plan (DP) for the project.

2.1 NO ACTION ALTERNATIVE

Inclusion of a No Action Alternative in the environmental analysis and documentation is required under NEPA. The No Action Alternative is defined as maintaining the status quo with no FEMA funding for any alternative action. The No Action Alternative is used to evaluate the effects of not providing eligible assistance for the project, thus providing a benchmark against which the "action alternatives" may be evaluated. For the purpose of this alternative, it is assumed that the County of Santa Barbara would be unable to implement the proposed action for lack of federal assistance, and a flood hazard would remain unmitigated at the project site.

Under the No Action Alternative, the current bridge would remain in place and would be maintained as necessary by the County. Based on past experience, winter stream flows would overtop the bridge several times during a normal winter, depositing sediment on the bridge and road and flooding the Park entrance. The duration of the flooding and depth of water would vary from event to event. However, the flooding would likely cause at least short-term closures of the road and the Park. Only large four-wheel-drive vehicles can traverse the bridge under these conditions. The County would respond to each flooding event. Depending on the severity and duration of the flooding, the County might need to wait several days before removing sediments. In an emergency, when the Park and Hollister Ranch would require immediate access, the County would take emergency actions to provide safe vehicular passage over the creek.

Once the flooding had ended, the County would determine if the creek upstream and downstream of the bridge would require desilting to improve conveyance for the next storm. Work in the creek would require permits, either routine or emergency, from the California Department of Fish and Game (CDFG), the California Coastal Commission (CCC), the U.S. Army Corps of Engineers (USACE), and the Regional Water Quality Control Board (RWQCB). In addition, the desilting work could affect several endangered species that reside near the bridge: the southern steelhead, the tidewater goby, and the California red-legged frog. Hence, the County might need to consult with these agencies prior to conducting any work to comply with the Federal Endangered Species Act.

Although this alternative is technically feasible, the County does not consider it to be a viable alternative due to the ongoing and often severe public safety hazard associated with the existing crossing. Further, the project has been determined to be eligible for FEMA funding, so the No Action Alternative is in conflict with FEMA's mission and the purpose of the Public Assistance Program.

2.2 PROPOSED ACTION

2.2.1 Project Elements

2.2.1.1 Proposed Bridge

The proposed bridge would be located at the site of the existing bridge, where the main creek channel is located in the floodplain (Figures 3, 4a, and 4b). Historical crossings since the early 1900s have also been located at this site. The bridge would consist of a 256-foot-long bridge constructed of cast-in-place, pre-stressed concrete slabs (Figure 5). The bridge would have two

concrete abutments and two piers. The concrete abutment footings would rest upon 10 or 12 steel pipe piles, about 1 foot in diameter and 15–20 feet long. The cast-in-place concrete piers would be about 20 feet long. Their footings would be designed to be 9.3 feet below the creek bed at finished grade. The pier footing would rest on 14 or 15 1-foot diameter steel pipe piles, about 55 feet deep

The bridge would be designed to pass the 100-year flood event with at least 2 feet of freeboard below the bridge soffit. The 100-year base flood elevation at the bridge site is about 20 feet elevation (North American Vertical Datum of 1988 [NAVD 88]). The bridge deck would be located at about elevation 26.8 feet. The bridge deck would have a thickness of about 2.5 feet. The creek bottom elevation at the bridge site varies, but was determined to be about 12.5 feet for design purposes. The clearance between the bottom of the bridge deck and the creek bed would be about 12 feet.

The bridge deck would have two 12-foot-wide travel lanes and 5-foot shoulders that would also be used for pedestrians and bicyclists (Figure 5). A 5-foot-wide bike lane would be striped on both sides of the bridge. The total width of the bridge, as measured from the outside of the concrete barriers, would be about 36.3 feet. The bridge would have a 4.7-foot high concrete barrier rail on each side. The design of the barrier would be determined during final design through a review and approval process with the County Board of Architectural Review (BAR) and with inter-agency consultations with State Parks. The conceptual design is a concrete rail designed to simulate a rustic rural wood fence. The rail would have vertical concrete elements ("wood posts") spaced at 10–20 feet with two horizontal concrete rails ("wood rails"). There would be openings between the rails. The vertical posts and rails as well as the bridge deck would be constructed of concrete with a dark wood coloring.

2.2.1.2 Channel Clearing and Desilting

To facilitate efficient passage of flows under the bridge after construction, the County would remove sediment that has accumulated at, upstream of, and downstream of the bridge site during the flooding events of 2003 and 2005. The desilting area is shown on Figure 6. It would extend about 250 feet downstream and 350 feet upstream of the new bridge. Sediment would be removed to the target elevations shown on Figure 6, which are the natural channel flow line elevations without the obstruction at the bridge site. The depth of excavation would range from 0.5 to 4.5 feet. These elevations would generally match the current low-flow channel elevation in the creek. The channel desilting would be a one-time event to provide the maximum channel cross section during the first winter after construction of the bridge. The channel desilting area encompasses about 1.5 acres and would require removal of about 7,500 cubic yards of creek sediment.

2.2.1.3 Northern Roadway Approach

As noted in above, the proposed bridge deck would about be 12 feet higher than the current bridge road surface. The higher road surface, coupled with the above-described channel desilting, would provide the required clearance for the 100-year flood event. The existing roadway approaches on each side of the new bridge would also be raised up to 12 feet to match the new elevation of the bridge deck (Figures 4a and 4b). The 782-foot-long roadway approach north of the existing bridge consists of a paved road that traverses the Gaviota Creek floodplain.

Before 1995, the roadbed elevation was at or above the adjacent floodplain elevation. Extensive sediment was deposited on the floodplain and on the road in 1995 and 1998. Sediment from the road was scraped and deposited on each side of the road, which has created 3- to 6-foot-high berms on each side of the road. The existing road would be removed and an embankment of up to 12 feet in height would be constructed, as shown on Figures 4a and 4b.

A cross section of the roadway embankment is shown on Figure 7. An earthen berm about 10 feet high and 70 feet wide would be constructed along the road alignment. The slopes of the embankment would be 2:1 (H:V). The slope on the east side of the road would be earthen and landscaped with native shrubs and trees. The upstream or western slope would be protected with ungrouted rock rip-rap.

The paved road would be about 34 feet wide, with two striped 12-foot-wide travel lanes and two 5-foot-wide paved shoulders. The shoulders would also be striped as Class II bike lanes. The existing road is about 18 feet wide without a center stripe, shoulders, or bike lanes. The design speed of the road would be 25 miles per hour (mph). Metal guard rails would be installed on both sides of the new road for its entire length. At the June 10, 2005, BAR meeting, the Board of Architectural Review requested that weathering rather than galvanized steel be used on the guard rails to soften the visual impact.

Three concrete box culverts measuring 4 feet by 4 feet would be installed through the roadway approach to provide passage for small wildlife (e.g., raccoons, skunks, opossum, woodrats, reptiles, and snakes). The locations of the passage culverts are shown on Figures 4a. The original design for the culverts was 2 feet by 3 feet, as shown on the project plans; the size of the culverts has been increased to facilitate wildlife movement. A cross section of the culverts that shows the design of the larger culverts is shown on Figure 8. The culverts would also convey flows under the roadway embankment during flood events. No culverts are present under the existing road.

2.2.1.4 Reconstructed Park Entrance and Campsites

A kiosk is located at the entrance to Gaviota State Park, with two lanes on each side. A turn-around loop is provided south of the kiosk. Day use visitors are directed along the main road, and campers are directed to the campground entrance that intersects the main road south of the kiosk. A dirt parking lot is located across from the kiosk. It is used for overflow parking by campers with more than one vehicle at a campsite.

The Park entrance would be modified as shown on Figure 9. The roadway to the Park would slope down from the elevated bridge to conform to existing grade. A new kiosk would be constructed about 115 feet south of the existing kiosk. The dimensions and architecture of the kiosk would generally match the existing kiosk; the final design would be developed in coordination with State Parks. The existing signage and outdoor lighting at the Park entrance kiosk would be replaced; the final design and locations of the signs and lights would also be developed in coordination with State Parks.

By moving the Park entrance to the south, the entrance to the campground must be moved as shown on Figure 9. The new entrance would remove two parking spaces and two campsites (nos. 34 and 35). Three new replacement campsites and parking spaces with the same dimensions and amenities (picnic table and grill) would be constructed east of the restrooms. The new campsites would be constructed at the location of existing Campsite 45, modifying the location to

accommodate three campsites instead of one, as shown on Figure 9. Hence, two new campsites would be constructed, replacing the two removed for the new entrance.

2.2.1.5 Rock Slope Protection

The upstream slope of the roadway embankment would be protected from erosion during flood events by ungrouted rock rip-rap (Figures 3, 4a, and 4b). The toe of the rock slope protection would be placed below the design scour depth, typically at about a 6.5-foot elevation. The rock would consist of a quarter ton of rough-edged rock, which has a typical individual rock diameter of 24 inches. A 3-foot layer of rock would overlay 18 inches of gravel and a filter fabric. The rock slope protection has been designed to prevent erosion of the roadway approach embankment. The design velocities are 10 fps. As shown on Figure 7, the rock slope protection would be buried to a depth of about 10 feet. The toe of the rock would be backfilled with native soil and compacted. The rock slope protection would be repaired or replaced by the County if it were substantially damaged during a flood event. Native willow trees would be planted among the rock rip-rap to create a dense and continuous cover for habitat purposes and to screen the rock rip-rap from travelers along the road. Most of the willows would be planted at the base of the rock rip-rap in the toe trench; the layout, composition, and thickness of the filter fabric may need to be modified to allow tree root growth.

Similar rock slope protection would be installed around the east abutment, as shown on Figures 3, 4a, and 4b. Willows would also be planted among the rock rip-rap as described above.

Rock slope protection would also be placed on the west side of the creek upstream and downstream of the bridge, as shown on Figure 6. Cross sections of this bank protection are shown on Figure 10. Upstream of the bridge, 1 ton of ungrouted rock would be keyed into the existing steep rocky bank. The typical diameter of this rock size is 36 inches. The toe of the rock would be buried 5 feet below the finished creek bed. The rock slope would be about 10 feet in height above the finished creek bed. This rock is required to prevent bank erosion upstream of the bridge where creek flows directly impinge on the bank. The length of rock slope protection upstream of the bridge would be about 180 feet. This bank protection would be repaired or replaced if it were substantially damaged during a flood event.

Downstream of the bridge, a quarter ton of ungrouted rock would be placed along 165 feet of the south bank to protect the bank from erosion. This bank has been subject to repeated erosion from prior flood events. The proposed rock protection would reduce the landward erosion. The rock protection would be buried for aesthetic purposes, covered with soil, and planted with willows to create habitat, screen the bridge from views from the day use areas, and screen the overflow parking lot from visitors on the bridge. This bank protection would be repaired or replaced by State Parks if it were substantially damaged during a flood event.

2.2.1.6 Right-of-Way

The County would acquire additional permanent right-of-way through an easement granted by State Parks that would extend along the existing road alignment from the California Department of Transportation (Caltrans) right-of-way near Highway 101 to the Park entrance. A small amount of construction work would occur in Caltrans right-of-way at the east end of the road, as shown on Figure 4a.

2.2.1.7 Maintenance

The County would have responsibility for maintaining the bridge and the roadway. Routine maintenance of the bridge and raised road is not expected to be needed due to the proposed design, which would allow for the passage of a 100-year flood event without flooding of the road or bridge. The bridge span is sufficient to allow large trees to pass without becoming stuck on the two piers in the channel. Sediment is not expected to accumulate under the bridge because the flow line from the upper reaches of the creek to the ocean would be free and continuous. The rock slope protection on the banks at the bridge site and along the road are designed to withstand the 100-year flow velocities. Hence, there would not be a need to maintain or repair the rock rip-rap except after highly unusual events.

Thus, the only maintenance that is expected to occur as a result of the proposed project is the trimming of large shrubs and overhanging branches from trees planted on the slopes of the road, the removal of vegetation and sediment from the wildlife movement culverts, and the possible trimming of trees at selected portions of the rock slope protection to provide temporary access to the floodplain for inspection of the toe of the buried rock rip rap. The County would conduct this maintenance. Information on the anticipated maintenance methods is presented below.

Tree Trimming

The County would remove or prune tree branches that create an obstruction to vehicles on the road or that represent potential hazards to vehicles. The County work crews would use chainsaws and operate from the roadway. Cut branches would be removed from the Park, unless the County and/or State Parks is using this woody debris as part of habitat restoration at the Park. Tree trimming would occur after the completion of the bird-breeding season (i.e., after July 15).

Culvert Cleaning

The County would periodically inspect the culverts to ensure that they are open. Field crews would prune branches that obstruct the openings of the culverts and remove debris from the site. If large tree trunks are embedded in the openings, the County may need to remove the debris using an excavator, backhoe, or winch. Sediment that obstructs the openings would be removed by field crews and a backhoe. The sediment would be taken from the site. Work would occur after the completion of the bird-breeding season and after it has been determined that no red-legged frogs are present. No work would occur in the active creek channel. Culvert maintenance would require temporary closure of one lane of the road.

Rock Rip-rap Repair

As noted above, the County does not anticipate a need to maintain or repair the rock rip-rap on the western side of the roadway embankment. However, if portions of the rock were to be removed by substantial flood events, the County would repair the slope to match the previous conditions. That is, ungrouted rock rip-rap would be placed on the slope and willows would be installed among the rocks. The work would likely be conducted from the road using an excavator with a long reach. The County does not anticipate that it would need to access the slope from the floodplain. The repair work would occur after the completion of the bird-breeding season and

after it has been determined that no red-legged frogs are present. No work would occur in the active creek channel. The repairs would require temporary closure of one lane of the road.

Bridge Pier and Abutment Cleaning

As noted above, the bridge has been designed to allow the passage of the debris-laden water associated with the 100-year flood. Hence, the County does not anticipate the build-up of sediment and woody debris at the bridge site. However, in the unlikely event that a large number of tree trucks or an accumulation of woody debris is caught on the piers or abutments, the County would remove the debris and haul it off site. The County would attempt to remove the debris using a crane operating from the bridge to avoid working in the creek bed. The work would occur after the completion of the bird-breeding season. The affected areas would be surveyed to ensure that they do not contain steelhead, tidewater gobies, or red-legged frogs. The repairs would require temporary closure of one lane of the bridge.

2.2.2 Construction

2.2.2.1 Project Schedule and Staging

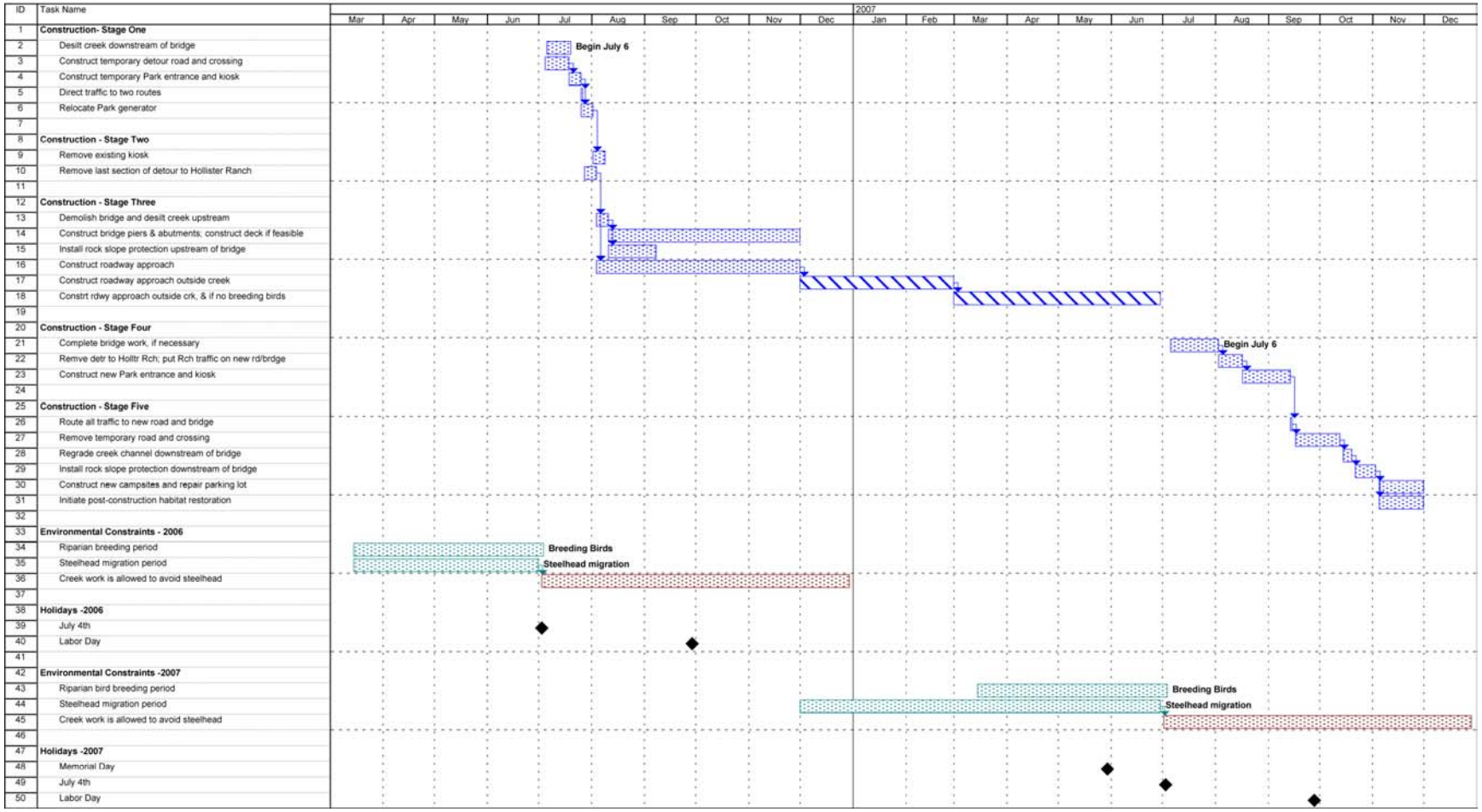
The proposed project is a major construction job that would require about 18 months to complete. The County anticipates that the project would begin in July 2006 and end in December 2007; these dates are considered preliminary and may change slightly depending on the final design and permit conditions. Because of recreational and seasonal constraints the work periods available for construction are limited. Table 1 lists these periods.

Table 1
Construction Work Periods During the Year

Time Period	Allowable Work
Year-round	Most of the work in the Park, including the park entrance, campsites, kiosk, etc.
July 1 to Dec 1	Work along the roadway approach and at the bridge; work in the creek channel
Dec 1 to March 1	Work along the roadway approach outside the creek channel
March 1 to July 1	Work on the roadway approach and at the bridge if the work is outside the creek channel and if no breeding birds are located in proximity
Saturdays, Sundays, and certain state holidays	No work allowed. For list of state holidays, see Section 2.2.4.3.

The project construction schedule is shown on Chart 1 based on a July 6 start date. The project would be constructed in five stages, which are summarized in Table 2. The locations of the construction work areas during each phase are shown on Figures 11a through 11e. All work would occur from 7 AM to 4 PM on Monday through Friday. No work would occur on weekends or on state holidays.

Chart 1: Gaviota Bridge Project Construction Schedule



Back of Chart 1.

Table 2
Summary of Construction Staging

Stage	Duration (weeks)	Major Construction Activities
1	4	▪ Desilt the creek downstream of the bridge ▪ Construct temporary detour road and crossing ▪ Construct temporary Park entrance and kiosk ▪ Install sign directing traffic to two routes across the floodplain ▪ Relocate the generator
2	1	▪ Remove existing kiosk ▪ Construct last section of detour to Hollister Ranch
3	17	▪ Demolish bridge and desilt creek upstream of bridge ▪ Construct bridge piers and abutments; construct deck ▪ Construct roadway approach, including embankment, rock slope, wildlife culverts, and pavement ▪ Install rock slope protection upstream of bridge
4	10	▪ Complete bridge construction (if necessary) ▪ Remove detour to Hollister Ranch; route Ranch traffic to new roadway and bridge ▪ Construct new Park entrance and kiosk
5	13	▪ Route all traffic to new roadway and bridge ▪ Remove temporary detour road and crossing ▪ Regrade creek channel downstream of bridge ▪ Construct rock slope protection downstream of bridge ▪ Construct new campsites and repair parking lot ▪ Initiate post-construction habitat restoration efforts (mitigation)

2.2.2.2 Temporary Detour Road

A temporary detour road would be constructed east of and parallel to the existing roadway, as shown on Figure 12. The vegetation along the route would be cleared and the corridor leveled. A 1- to 6-foot-high, 30- to 35-foot-wide embankment would be constructed using imported fill material. A paved road with two 12-foot-wide lanes and two 3-foot-wide unpaved shoulders (total paved width = 30 feet) would be constructed.

2.2.2.3 Truck Traffic and Quantities

An estimate of the worker vehicle and truck trips associated with the various construction stages is provided in Table 3. Peak daily truck trips (about 100 per day) would occur during Stage 1, when the temporary detour road is being constructed using imported fill and creek sediments are being removed from the site. Peak daily truck trips would also occur during Stage 3, when fill is imported for the roadway approach embankment.

Table 3
Summary of Truck and Worker Vehicle Trips and Material Quantities

Stage	Duration (weeks)	Number of Worker Vehicle Trips*	Imported Fill (CY)	Exported Fill (CY)	Avg. Daily Truck Trips*	Peak Daily Truck Trips*
1	4	15	10,000 (detour road fill)	3,750 (creek sediment)** 500 (detour grubbing)	50	100 (detour road fill)
2	1	10	<500	<500	10	20
3	17	25	40,000 (fill for road and rock slope) 10,000 (pavement) 15,000 (concrete work) 2,000 (rock)	1,500 (clear and grub road corridor) 3,750 (creek sediment)**	75	100 (for road embankment)
4	10	15	<500	<500	20	40
5	13	15	2,000 (rock)	1,000 (creek sediment) 10,000 (detour road fill)	20	75

*All trips are round trips (to and from the site). Assume 20-yard capacity for haul trucks. ** This analysis assumes that none of the channel sediments (7,500 CY) from desilting would be suitable for use as embankment fill.

2.2.3 Required Permits

Before the County may implement the project on Park property, State Parks must provide the following permits and approvals: (1) Agreement and Grant of Easement to expand the existing easement and incorporate a larger area; and (2) Right of Entry Permit for temporary construction activities that would occur on Park property.

The proposed project would require a County CUP and an approved DP. The County, as the project applicant, has filed applications for these permits and approvals. The County of Santa Barbara Planning and Development Department staff will process the permit applications. The Planning Commission and the Board of Supervisors will consider the CUP and the DP and may apply conditions of approval. The County Planning and Development Department must issue a Coastal Development Permit (CDP) for the portion of the project in the County's permit jurisdiction.

The proposed project is located in a Coastal Zone, where land use authority resides with both the County and the CCC. The County has submitted an application for a CDP to the CCC for the portion of the project in the CCC's original permit jurisdiction. The CCC will conduct a public hearing on its CDP.

The County will also need to acquire a Streambed Alteration Agreement from the CDFG because the project would affect the bank and bed of Gaviota Creek.

Under Section 404 of the Clean Water Act, the USACE regulates certain discharges of fill into tidal and non-tidal "waters of the United States." Gaviota Creek and adjacent wetlands are considered regulated "waters." Hence, the County needs to acquire a USACE Section 404 permit for the project.

The County must also acquire a Section 401 water quality certification from the RWQCB to acquire a USACE Section 404 permit.

2.2.4 Environmental Protection Measures

The County and FEMA have developed the following environmental protection measures to avoid and minimize impacts to various environmental resources and recreational uses at the Park during the construction of the project. These measures are considered integral elements of the project description and will be fully implemented by the County.

2.2.4.1 Water Resource Measures

W-1. Storm Water Pollution Prevention Plan

The following measures shall be incorporated into the project Storm Water Pollution Prevention Plan (SWPPP), which must meet the state National Pollutant Discharge Elimination System (NPDES) General Construction Permit requirements. The SWPPP shall incorporate all feasible Best Management Practices (BMPs) to reduce erosion from construction activities, to prevent sediment in storm water discharges, and to minimize non-storm-water pollutants at the project site to the maximum extent possible.

- The following construction activities involving minor earthwork and grading may occur in the winter months (designated as the following period for this project: November 1 to April 1) provided erosion control BMPs are implemented to prevent discharge of sediments and polluted runoff to the creek during the work: (1) work on the roadway approach; (2) work at the Park entrance and connection to Hollister Ranch Road; (3) construction of new campsites; and (4) habitat restoration efforts. Standard BMPs in the winter shall include silt fencing and vegetative buffers. Additional BMPs are required as described below.
- The SWPPP must include a contingency plan to protect the exposed work site during the winter months in the event of high runoff in the creek that could overtop banks and inundate work areas. The site must be secured from catastrophic erosion by use of erosion control mats, temporary levees, and other measures.
- Temporary stockpiles at the project site shall be protected from erosion by the combined use of surface stabilization, upslope runoff diversions, temporary berms around the perimeter, perimeter interceptor ditches, and temporary downstream catchments, as necessary and appropriate. Stockpiles that are present during the winter season (designated as November 1 to April 1 for this project) shall be protected from erosion due to direct precipitation or runoff during the winter by the use of surface stabilization (such as erosion control blankets or temporary seed cover).
- BMPs to prevent discharge of construction materials, contaminants, washings, concrete, fuels, and oils would include the following measures:
  - Ensure that all construction vehicles and equipment that enter the construction and grading areas are properly maintained (off-site) to prevent leaks of fuel, oil, and other vehicle fluids

  - Implement measures and provide materials to contain any accidental spills or leakage during the fueling of construction equipment at the site
  - Place all stored fuel, lubricants, paints, and other construction liquids in secured and covered containers within a bermed or otherwise contained area at least 200 feet from the creek
  - Refuel only in bermed areas with impermeable surfaces at least 200 feet from the creek
  - Prohibit equipment washing and major maintenance at the project site, except for the wash-down of vehicles to remove dirt
  - Remove all refuse and construction debris from the site as soon as possible
- To reduce tracking of sediment from the construction site into the Park and onto Hollister Ranch Road and Highway 101, stabilized construction entrance/exits shall be constructed and maintained at entrances to the work areas. Tracking control will be achieved through the use of either gravel or metal plates. Any sediment deposited outside the work area shall be cleared at the end of each work day.
- Two weeks before the beginning of the winter season (designated as November 1 for this project), erosion control BMPs shall be installed at the site in anticipation of rain events. Due to the extensive area and volume to be graded at the project site, erosion control measures shall include more than the placement of silt fences. Additional control shall include other BMPs that are equally or more effective and that provide redundancy, such as temporary grass cover, interceptor ditches, coconut fiber rolls, erosion control mats, and temporary downstream catchment basins.

W-2. Letter of Map Revision

The County shall submit *Draft Design Hydraulic Report for the Replacement of Gaviota Beach Road and Bridge* (WRECO 2003) to FEMA as a Letter of Map Revision.

2.2.4.2 Biological Resource Measures

B-1. Seasonal Restriction for Work in the Creek

No construction work involving clearing, grubbing, dewatering, excavation, or filling shall occur within the bed and bank of Gaviota Creek, or within 15 feet of the top of bank during the period December 1 to July 1 to prevent impacts to migrating steelhead and to avoid impacts to riparian breeding birds. Work may occur in the creek in the month of December or in the month of June if specifically approved in writing by the U.S. Fish and Wildlife Service (USFWS), CDFG, and the National Marine Fisheries Service (NOAA Fisheries) because impacts to steelhead migration are not expected due to hydrologic conditions at the time. These agencies shall also determine that no substantial impacts would occur to any other biological resources by extending the work period for these months.

B-2. Restoration of Temporarily Disturbed Areas

All temporarily disturbed areas associated with construction access to the bridge, the roadway approach, and bank protection near the bridge shall be restored to native riparian habitats. In addition, the corridor disturbed for the temporary detour road shall also be restored to native riparian habitat. The County shall prepare a detailed restoration plan, to be approved by State Parks, that will specify the areas to be restored, site preparation methods (including weeding and soil treatment), plant sources, planting methods, supplemental watering, and a 5-year maintenance and monitoring program. The goal of the restoration is to establish a diverse mixture of riparian scrub and woodland in the disturbance zones that would have a higher species diversity and lower weed cover than under current conditions. Restoration would commence in November 2007 at the end of construction. The minimum performance goals at the end of 5 years would be 90 percent native plant cover, less than 5 percent noxious weed cover, and plants relying on natural rainfall and soil moisture conditions for at least 2 years. The channel desilting area shall be allowed to revegetate naturally. Active revegetation is not proposed because this area would be subject to flooding. However, the County would actively weed this area for 5 years to prevent the invasion of exotic weeds. Invasive weed cover shall not exceed 10 percent at the end of 10 years.

In addition to revegetating the temporary disturbance zones (a total of 1.19 acres, but not including the desilted channel), the County shall restore or enhance other riparian habitat along Gaviota Creek to provide a 3:1 restoration ratio for temporary impacts (exclusive of the desilted channel), in accordance with the anticipated requirements of the CDFG Streambed Alteration Agreement for the project. Additional restoration areas would consist of barren, highly disturbed, or weed-dominated areas in the floodplain. Restoration of these areas shall follow the above maintenance, monitoring, and performance requirements. Hence, the total restoration requirements for temporary impacts shall be 3.57 acres (1.19 acres x 3), of which 1.19 acres shall occur in the disturbance zones, and 2.38 acres shall occur in suitable locations elsewhere in the Park.

B-3. Planting Rock Rip-rap

The voids in the ungrouted rock rip-rap along the north side of the roadway approach and at the bridge site shall be backfilled with native soils and planted with willow and mule fat cuttings at the end of 2007, when construction is expected to end and conditions for planting are ideal. The minimum stem spacing shall be 8 feet. The County shall prepare 5-year maintenance and monitoring plan that describes how the plants would be maintained (e.g., watering) and the weeds managed. The County shall consult with State Parks before planting to determine if breaks in the planting are desirable to provide visual opening for travelers. The minimum performance goals at the end of 5 years shall be 75 percent native plant cover, less than 5 percent noxious weed cover, and plants relying on natural rainfall and soil moisture conditions for at least 2 years.

B-4. Storm Water Pollution Prevention Plan (same as W-1)

The following measures shall be incorporated into the project SWPPP, which must meet the state NPDES General Construction Permit requirements. The SWPPP shall incorporate all feasible

BMPs to reduce erosion from construction activities, prevent sediment in storm water discharges, and minimize non-storm-water pollutants at the project site to the maximum extent possible.

- The following construction activities involving minor earthwork and grading may occur in the winter months (designated as November 1 to April 1 for this project) provided erosion control BMPs are implemented to prevent discharge of sediments and polluted runoff to the creek during the work: (1) work on the roadway approach; (2) work at the Park entrance and connection to Hollister Ranch Road; (3) construction of new campsites; and (4) habitat restoration efforts. Standard BMPs in the winter shall include silt fencing and vegetative buffers. Additional BMPs are required as described below.
- The SWPPP must include a contingency plan to protect the exposed work site during the winter months in the event of high runoff in the creek that could overtop banks and inundate work areas. The site must be secured from catastrophic erosion by use of erosion control mats, temporary levees, and other measures.
- Temporary stockpiles at the project site shall be protected from erosion by the combined use of surface stabilization, upslope runoff diversions, temporary berms around the perimeter, perimeter interceptor ditches, and temporary downstream catchments, as necessary and appropriate. Stockpiles that are present during the winter season (designated as November 1 to April 1 for this project) shall be protected from erosion due to direct precipitation or runoff during the winter by the use of surface stabilization (such as erosion control blankets or temporary seed cover).
- BMPs to prevent discharge of construction materials, contaminants, washings, concrete, fuels, and oils would include the following measures:
  - Ensure that all construction vehicles and equipment that enter the construction and grading areas are properly maintained (off-site) to prevent leaks of fuel, oil, and other vehicle fluids
  - Implement measures and provide materials to contain any accidental spills or leakage during the fueling of construction equipment at the site
  - Place all stored fuel, lubricants, paints, and other construction liquids in secured and covered containers within a bermed or otherwise contained area at least 200 feet from the creek
  - Refuel only in bermed areas with impermeable surfaces at least 200 feet from the creek
  - Prohibit equipment washing and major maintenance at the project site, except for the wash-down of vehicles to remove dirt
  - Remove all refuse and construction debris from the site as soon as possible
- To reduce tracking of sediment from the construction site into the Park and onto Hollister Ranch Road and Highway 101, stabilized construction entrance/exits shall be constructed and maintained at entrances to the work areas. Tracking control will be achieved by either gravel or metal plates. Any sediment deposited outside the work area shall be cleared at the end of each work day.
- Two weeks prior to the beginning of the winter season (designated as November 1 for this project), erosion control BMPs shall be installed at the site in anticipation of rain events. Due

to the extensive area and volume to be graded at the project site, erosion control measures shall include more than the placement of silt fences. Additional control shall include other BMPs that are equally or more effective and that provide redundancy, such as temporary grass cover, interceptor ditches, coconut fiber rolls, erosion control mats, and temporary downstream catchment basins.

B-5. Qualified Biological Monitor

At least 90 days prior to the onset of construction activities, the County shall submit to USFWS and NOAA Fisheries the name(s) and credentials of the biologist(s) who would conduct the monitoring, surveying, species relocation, and other biological field activities specified in these biological avoidance and minimization measures. No project activities shall begin until proponents have received written approval from USFWS that the biologist or biologists are qualified to conduct the work.

B-6. Relocation of Species From Creek Prior to Construction

A biologist approved by USFWS and NOAA Fisheries shall survey suitable habitat for the southern steelhead trout, the tidewater goby, and the red-legged frog in the Gaviota Creek work site, which encompasses the temporary creek crossing, the new bridge, and the channel desilting area. The survey shall take place two weeks before the initiation of construction activities in the creek that involve clearing, grubbing, or grading. At that time, the biologist shall place a barrier at the upstream and downstream ends of the creek work area to prevent the movement of steelhead trout, tidewater gobies, and red-legged frogs into the work area. The barriers shall be constructed of blocking nets and silt fencing, as necessary, but shall allow the free passage of flows in the creek. The biologist shall remove gobies and red-legged frogs using USFWS-approved methods under the terms and conditions of handling permits for these species. Gobies shall be relocated to the creek downstream of the work area, and red-legged frogs shall be relocated to suitable pool habitat upstream of the work area. It is not anticipated that steelhead trout will be found within the action area; however, if they are found during surveys, the biologist shall remove all steelhead using NOAA Fisheries–approved methods and under the terms and conditions of handling permits for this species. If steelhead trout are found within the work area, they shall be relocated to suitable pool habitat upstream of the work area. Once all individuals of these species have been removed from the work area, the work area can be dewatered.

B-7. Dewatering and Creek Bypass Operation

The dewatering operation for the creek work area shall be constructed and operated in such a manner as to ensure reliable 24-hour bypass of all flows around the creek work area using electric pumps (if feasible) with a back-up system in the event of a power outage. The intake and outlets of the bypass system shall be screened with a 5-millimeter (mm) mesh to prevent the entrainment of aquatic species. The dewatering and bypass system shall be inspected throughout the day and prior to leaving the work site at night. The bypass system shall be inspected and maintained during non-work days (i.e., Saturdays, Sundays, and holidays) by the Contractor on a more frequent basis to prevent outages due to vandalism.

A USFWS-approved biologist shall monitor the construction of the temporary creek crossing and channel desilting operation to ensure that no aquatic habitat with gobies or red-legged frogs remains in the dewatered creek work area. The biologist shall have the authority to require the Contractor to stop work if an endangered species is located in the work area. The biologist may stop work until such time that the species is relocated and the origin of the problem has been identified and corrected.

On or before December 1, 2006, the Contractor shall remove the dewatering and creek bypass system and the upstream and downstream barriers in the creek work area. The removal of these facilities and re-instatement of flows to the creek work area shall be completed in less than an hour to ensure that any endangered species in the creek flows are not stranded in the work area. Prior to re-instating the flows, the Contractor shall grade a pilot channel through the work area with the approximate dimensions of 6 feet wide and 2 feet deep, subject to modification by the USFWS-approved biologist who is monitoring the operation.

B-8. Pilot Channel

On completion of the project, a pilot channel shall be excavated in the area of the channel that was desilted to contain low flows at the time of construction and to create a path for early winter flows. The pilot channel shall be approximately 6 feet wide and 2 feet deep, and constructed of in-channel materials. Cobbles shall be used to form the channel as feasible.

B-9. Temporary Exclusion Fence Along Work Limits

Before any clearing and grubbing activities at the site or surveying that requires vegetation removal or trampling, a qualified biologist shall direct the placement of temporary exclusion fencing along the work limits to prevent entry by workers or equipment into adjacent habitat areas and prevent any frogs from entering the construction area. The biologist shall relocate any frogs present in the work area prior to placing the fence. The exclusion fence shall be constructed of geo-textile silt fencing material attached to steel fence posts and shall be buried at the base to close all gaps. A fine (less than 1 centimeter [cm]) mesh shall be used to avoid entrapment of amphibians or fish in the silt fence. The silt fence shall be monitored by a qualified biologist periodically during construction to evaluate its effectiveness. The fencing shall be maintained throughout the construction period and removed on project completion.

B-10. Construction Monitoring for Special-Status Species

An approved biologist shall monitor construction activities that involve stream diversion, vegetation removal from the floodplain, desilting of the creek, grading or filling of the floodplain, and installation of rock slope protection. The objective of the monitoring is to determine if any special-status species, particularly the red-legged frog, have recolonized these work areas, and could be vulnerable to disturbance. The biologist shall determine the frequency and extent of monitoring of these previously cleared areas. If any special-status species are found within the work area during construction, construction activities shall be temporarily suspended until the biologist can relocate the species to suitable habitat outside the work area. The biologist shall also ensure that all barriers installed to prevent special-status species from entering the work area are in good condition and functioning properly.

B-11. Worker Education

During the pre-construction conference with the Contractor, the County shall have the USFWS-approved biologist conduct a training session for all construction personnel. At a minimum, the training shall include descriptions of the southern steelhead trout, the tidewater goby, and the California red-legged frog and their habitats at the site, the specific measures that are being implemented to protect these species during construction, the project limits, and lines of communications concerning any issues with these species.

B-12. Trash Management

Throughout the construction period, all trash that could attract predators shall be properly contained, removed from the work site, and disposed of regularly. After construction, all trash and construction debris shall be removed from work areas.

B-13. Fueling Restrictions

All fueling and maintenance of vehicles and other equipment shall occur at least 200 feet from any riparian habitat or waterbody. Staging areas shall also be located at least 200 feet from any riparian habitat or waterbody. This restriction shall be included in the Contractor's SWPPP, which must meet state requirements.

B-14. Weed Control

The Contractor shall not stockpile materials on-site in a manner that could cause the introduction or spread of invasive exotic plant species to other portions of the project site.

B-15. Removal of Invasive Species

The USFWS-approved biologist shall permanently remove from within the project area any individuals of exotic species, such as bullfrogs, crayfish, and centrarchid fishes, to the maximum extent possible.

B-16. Habitat Restoration for Permanent Habitat Loss

The County shall restore riparian habitat at the Park in the winter following construction to offset the loss of wetland and riparian habitats due to the proposed project. The total permanent riparian and wetland habitat loss to be mitigated is 0.503 acres. The total mitigation acreage would be based on a 5:1 replacement ratio, resulting in the restoration of 2.5 acres. The County shall prepare a detailed restoration plan, to be approved by State Parks, CDFG, CCC, and USFWS, that specifies the areas to be restored in the Park, site preparation methods (including weeding and soil treatment), plant sources, planting methods, supplemental watering, and a 5-year maintenance and monitoring program. The goal of the restoration is to establish a diverse mixture of riparian scrub and woodland in the disturbance zone that would have a higher species diversity and lower weed cover than under current conditions. Restoration would commence at the end of 2007, when construction is expected to end and conditions for planting are ideal. The minimum performance goals at the end of 5 years would be 90 percent native plant cover, less than 5 percent noxious weed cover, and plants relying on natural rainfall and soil moisture

conditions for at least two years. The restoration plan shall include a 5-year feral pig management element to prevent damage to the new plants. On mutual agreement by the County and State Parks, the County may provide one-time funds for State Parks to implement the restoration and maintenance and monitoring program, with full responsibility for achieving the restoration goals resting with the County.

2.2.4.3 Recreation Measures

R-1. No Work on Holidays

All construction activity, including truck deliveries or hauling, are prohibited on weekends, the following state holidays, and the afternoons preceding these holidays: Memorial Day, Independence Day, and Labor Day. In addition, construction would be prohibited on the following state holidays if observed on Friday or Monday: Martin Luther King Jr. Day, Presidents' Day, Cesar Chavez Day, Columbus Day, and Veterans Day.

R-2. Notification of Construction Work to State Parks

The County would provide information to State Parks on a weekly basis concerning the nature, location, and progress of construction. This information would also include a 60-day projection of construction work. In addition, it would include information on the dates and times of any major construction activities, such as pile driving, that could cause noise impacts to park users. It is anticipated that State Parks would include information on its Web site so that visitors considering use of Gaviota State Park are aware of the presence of construction activities. The County would also provide bi-weekly notices in the *Santa Barbara News Press, Lompoc Record,* and *Santa Maria Times* concerning the nature and progress of construction. It is anticipated that State Parks would also provide a handout to drive-in visitors about the construction work to allow visitors to decide whether they want to stay at the Park during the construction work.

R-3. Restrictions on Pile Driving

Pile driving shall not occur prior to 8 AM or later than 4 PM.

R-4. Final Bridge and Roadway Aesthetic Design

The County shall acquire approval of the proposed bridge deck coloring, the bridge rail design and coloring, and the guard rail coloring from BAR. The aesthetic design of these project elements shall emphasize reducing the contrast between the proposed roadway and bridge with the rural character of the Park. The County shall provide State Parks with an opportunity to provide input on these aesthetic treatments to address concerns about the effect of the project on the visitor experience.

R-5. Shade Cloth on Construction Fencing

To further reduce the impacts of the staging areas in the Park, the County shall require the Contractor to use chain-link fencing with green-colored shade cloth.

2.2.4.4 Noise

N-1. Engine Conditions

All noise-producing project equipment and vehicles using internal combustion engines (including haul trucks) shall be professionally fitted with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features. These devices shall be maintained in good operating condition so as to meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders and air compressors) shall be equipped with shrouds and noise control features, which are readily available for that type of equipment.

N-2. Location of Staging

Material stockpiles, equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors so as to minimize construction noise impacts to nearby noise-sensitive receptors.

N-3. Speed Limits

Construction site and access road speed limits (15 mph) shall be established and enforced during the construction period.

N-4. Possible use of Vibratory Hammer

If soil conditions allow, if sheet piles are not being driven, and if otherwise feasible, a vibratory hammer shall be used rather than an impact-type hammer. Pile holes shall be pre-drilled where practicable. To the extent practicable, the Contractor shall comply with U.S. General Services Administration (GSA) contract noise specifications to limit pile driving noise to a maximum sound level of 95 a- weighted decibels (dBA) at a distance of 50 feet.

N-5. Combining Construction Activities

To the extent practicable, the noisiest operations shall be scheduled to occur simultaneously in the construction program to avoid prolonged periods of annoyance.

2.2.4.5 Other Measures

A-1. Emission Reductions: Equipment Emissions

The following measures would reduce the fugitive dust emissions related to construction activities and haul trucks. These measures are based on the standard dust mitigation measures of the Air Pollution Control District (APCD).

- Areas subject to clearing, grading, earth moving, or excavation shall be kept sufficiently moist through use of either water trucks or sprinkler systems to prevent dust from leaving the site. Water trucks or sprinkler systems shall also be used to keep on-site roads (paved and unpaved) damp enough to prevent dust raised during operations from leaving the site. At a minimum, this activity shall include wetting down these areas in the late morning and after

work is completed for the day. At the end of the day, areas with disturbed soil shall be sufficiently moistened to create a crust. Increased watering frequency shall be required whenever the wind speed exceeds 15 mph. These areas must also be kept moist during weekends and days when no construction activities are occurring.

- Reclaimed water shall be used for dust control if the Department of Public Works Director determines that it is reasonably available.
- Stockpiles and barren areas at the project site that would be disturbed on a periodic basis (at least once every 5 days) shall be kept sufficiently moist by the use of water trucks or sprinklers to prevent dust from leaving the site.
- Stockpiles and barren areas at the project site that would remain undisturbed for more than 5 days shall be stabilized by the use of tackifiers, soil binders, or other measures. These stabilization agents shall be replenished throughout the dry season as needed to prevent dust emissions.
- On-site vehicle speeds shall be limited to 15 mph or less.
- Gravel pads or similar devices shall be installed at all access points to prevent tracking of mud onto public roads.
- Gaviota Beach Road and Hollister Ranch Road shall be inspected daily (at midday and at the end of the day) during periods of truck hauling to determine if there is an accumulation of silt on the road that could cause fugitive dust. These road segments shall be kept clean of such silt by the use of a street sweeper or watering truck.
- Trucks transporting fill material to and from the site shall be tarped from the point of origin.
- On the completion of construction, all disturbed areas shall be stabilized by the use of rock protection or perennial vegetation.
- The Contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off-site. The duties of this person or persons shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such person or persons shall be provided to the APCD prior to initiation of construction. All dust control requirements shall be shown on grading and building plans.

A-2. Emission Reductions: Fugitive Dust

The following measures would reduce nitrogen oxide (NO_X) emissions from construction equipment and haul trucks. These measure are based on the standard mitigation measures of the APCD.

- Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated “clean” diesel engines) should be utilized wherever feasible.
- The engine size of construction equipment shall be the minimum practical size.
- The number of pieces of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.

- Construction equipment shall be maintained in tune per the manufacturer's specifications.
- Construction equipment operating on-site shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines.
- Catalytic converters shall be installed on gasoline-powered equipment, if feasible.
- Diesel particulate filters as certified and/or verified by the U.S. Environmental Protection Agency (USEPA) or the State of California shall be installed, if available and if determined to be reasonable and feasible by the County.
- Construction worker trips should be minimized by encouraging carpooling and by providing for lunch on-site.

T-1. Restriction on Truck Egress

Trailer trucks exiting from the project site shall be prohibited from turning left onto northbound Highway 101. Trucks shall travel southbound on Highway 101 for 1.3 miles to the Gaviota Station Road interchange (oil terminal site), where the trucks shall exit the highway and use an overcrossing to join the northbound lanes of Highway 101. The County shall enforce this measure with the Contractor through signage, monitoring, and fines for violations.

C-1. Avoid Disturbance to Historic Site

The portion of the detour road within the boundaries of the historic site (see Section 3.8.3 for details) shall be constructed by placing a fabric filter on the route (after clearing vegetation by hand) and then placing fill for the temporary road. No excavation or surface grading of more than 1 foot below existing grade shall occur when installing and removing the detour road corridor within the boundary of the site. An archaeological monitor shall be present during the road construction and removal within the boundaries of the site.

C-2. Unexpected Finds

If unanticipated resources are discovered during construction, the County will stop project activities in the vicinity of the discovery, take all reasonable measures to avoid or minimize harm to the property, and notify FEMA as soon as practicable so that FEMA can re-initiate consultation with the State Historic Preservation Officer (SHPO), in accordance with the Programmatic Agreement between FEMA, SHPO, OES, and the Advisory Council on Historic Preservation.

If human remains are discovered during the course of the project, the specific protocol, guidelines, and channels of communication outlined by the California Native American Heritage Commission (NAHC) and in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) would be followed. Section 7050.5(c) would guide potential Native American involvement in the event of the discovery of human remains, at the direction of the County Coroner. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she would contact the NAHC by telephone within 24 hours.

2.3 ALTERNATIVE ALIGNMENTS

During the early stages of project development, the County examined two alternative alignments for the bridge and roadway improvements: one east of the existing corridor and one west of the existing corridor (Figures 13a to 13c). These alternatives were examined because they allow the existing road and bridge to remain in service while a new parallel road and bridge are constructed. Essentially, the existing road and bridge would be used as a temporary detour road while a new roadway and bridge are constructed adjacent to the existing alignment. Under these alternatives, once the new bridge and road are completed, the existing road and bridge are removed and the floodplain restored and revegetated.

The roadway embankment for the easterly and westerly alignments has the same dimensions as under the proposed project. An earthen berm about 10 feet high and 70 feet wide would be constructed along the alternative alignments. The slopes of the embankment are 2:1 (H:V). The slope on the east side of the road is earthen and landscaped with native shrubs and trees. The upstream or western slope is protected with ungrouted rock rip-rap. The paved road is about 34 feet wide, with two striped 12-foot-wide travel lanes and two 5-foot-wide paved shoulders. The shoulders are striped as Class II bike lanes. Metal guard rails would be installed on both sides of the new road for its entire length.

The bridge for each alternative is identical to the bridge for the proposed project. However, the bridge under these alternatives is skewed to connect to the Park entrance and Hollister Ranch Road. The Park entrance is modified in a way that is similar to the proposed project, with additional lanes and a new kiosk.

2.4 CAUSEWAY ALTERNATIVE

The causeway alternative is an extended bridge structure that provides a large continuous span across the entire floodplain. The County developed a conceptual design for this alternative (Figure 14). The causeway would be about 925 feet in length. The causeway has the same width as the proposed bridge. The bridge deck has two 12-foot-wide travel lanes and 5-foot shoulders that are also used for pedestrians and bicyclists. A 5-foot-wide bike lane is striped on both sides of the bridge. The total width of the bridge, as measured from the outside of the concrete barriers, is 36.3 feet. The bridge deck consists of a cast-in-place concrete slab with a closed soffit, which can prevent debris from snagging on the bottom of the bridge during a flood. The bridge has a 4.7-foot-high concrete barrier rail on each side. The bridge deck is about 10-12 feet above the existing road and floodplain. There are concrete abutments at both ends and 13 sets of eight concrete piers spaced at 40 feet (Figure 14). Approximately 168 piers would be installed to support the bridge.

The causeway would allow the creek to meander through the entire lower floodplain, unimpeded by the current or proposed road and bridge, both of which direct flows toward the bridge crossing sites.

The causeway would be constructed along the current road and bridge alignment. The existing road pavement and the existing bridge would be removed. Sediment, the road, and the existing roadway fill would remain in place after construction with the expectation that they would eventually be scoured by flood flows. Temporary access roads would be required on each side of

the existing road to provide access to the pier locations. A temporary detour road would also be required, as in the proposed project.

The construction period under this alternative is slightly less than that of the proposed project, possibly 12 to 14 months. Construction would occur throughout the year (except during the bird-breeding season), as installation of the piers and the bridge decks would occur outside the active creek channel for most of its length. This alternative does not require modification of the entrance to the Park or relocation of the campsites. The estimated construction cost of this alternative is about $4.1 million, which is about $1 million more than the cost of the proposed project.

The County does not consider this alternative to be feasible due its significantly higher construction costs. Any cost above the current estimated construction cost of the proposed action would not be reimbursed by FEMA and would become the responsibility of the County. Also, under this alternative the County would not only have to absorb the design costs expended to date for the proposed action but also have to expend additional funds for the new design. The additional funds needed under this alternative are not available from the County, and State Parks has not indicated that funds for this alternative are available from the state. This alternative is also considered to be infeasible because the time required to complete a new design would postpone the construction period for at least one year, which would jeopardize FEMA funding.

2.5 ALTERNATIVE BRIDGE SITE

Under this alternative, a new bridge would be constructed about 2,500 feet north of the existing bridge, near the All-American pipeline crossing of Gaviota Creek and the southbound Caltrans rest stop (Figure 15). The purpose of this alternative is to traverse the creek where the channel is relatively narrow and thereby minimize impacts to the riparian habitat in the floodplain.

Under this alternative, a new at-grade intersection is constructed along Highway 101. The intersection would have a left-turn pocket lane for northbound traffic, a merging lane for northbound traffic from Gaviota Beach Road, and a right-turn lane for southbound traffic (Figure 15).

A 100-foot-long bridge would be constructed across the creek. The bridge would likely span the entire creek, resting on two concrete abutments. The bridge would have two 12-foot travel lanes and two 5-foot shoulders with bike lanes.

A new Gaviota Beach Road would be constructed in the Park that would extend 4,000 feet from the bridge. The road would be constructed on a fill embankment because of the uneven topography that would be traversed. The width of the road fill would range up to 60 feet, and the berm height would range up to 6 feet high. Several cut slopes would occur near the southern terminus, with vertical slopes of up to 20 feet. The paved road would be about 34 feet wide, with two striped 12-foot-wide travel lanes and two 5-foot-wide paved shoulders. The shoulders would also be striped as Class II bike lanes. Metal guard rails would be installed on both sides of the new road for its entire length. It is assumed that State Parks would construct a new and separate trail for hikers that travel from the main Park area to the upper portions of the Park. The new road would end at Hollister Ranch Road, where there would be a stop sign–controlled intersection.

Visitors to the Park would travel down the old Hollister Ranch Road. They would have to navigate two hairpin turns (Figure 15). The entrance to the Park would need to be modified to provide the appropriate turning radius for RVs and vehicles with boat trailers.

The existing road pavement, accumulated sediment, and bridge would be removed and restored to floodplain habitats.

This alternative would require more time to complete than the proposed project because of the long road and cut/fill slopes and the need to remove the existing bridge and roadway embankment once the new road and bridge are installed.

The County does not consider this alternative to be feasible for the following reasons:

- The cost of this alternative would be substantially greater than that of the proposed action, and the County does not have funds for the additional cost. In addition, FEMA would not provide funds above the amount allocated for the proposed action.
- A new intersection with Highway 101 would need to be constructed; the feasibility of a new intersection is considered remote based on sight distance and proximity to the rest stop. In addition, Caltrans is unlikely to approve a new at-grade intersection on a state highway due to safety concerns. The only acceptable facility would be an interchange with a crossover structure.

This section describes existing conditions in the project area; evaluates the potential for the No Action Alternative, the Proposed Action, the Alternative Alignments, the Causeway Alternative, and the Alternative Bridge Site to result in direct and indirect impacts on the environment; and discusses mitigation measures to avoid or minimize these impacts. This section focuses on the environmental resources for which some level of impact may result: water resources, biological resources, recreation, noise, air quality, visual resources, traffic and circulation, and cultural resources. No other resource areas require evaluation pursuant to NEPA.

3.1 WATER RESOURCES

3.1.1 Existing Conditions

3.1.1.1 Watershed Conditions

The Gaviota Creek watershed encompasses about 20 square miles (Figure 16). The average annual rainfall in the watershed is about 26 inches. The watershed is mostly undeveloped, with a mixture of open space, grazing lands, and isolated development. The topography of the watershed is complex and rugged. The highest elevation is about 2,900 feet. The vegetation includes annual grassland, chaparral, oak woodland, and coastal sage scrub. The geology of the watershed is characterized by steep southward dipping beds of Tertiary and Cretaceous-aged marine sedimentary rocks, with lithologies ranging from hard sandstones and conglomerates to loosely consolidated and deeply weathered siltstones and shales. The watershed is dissected by several east-west trending faults. The floodplain along Gaviota Creek from the pass to the ocean consists of a wide floodplain of Recent alluvial stream deposits that are eroded and redeposited during storm events. The active stream channel is flanked by marine terrace deposits that are not cemented and as such, are subject to erosion. In general, the watershed contains extensive geologic formations and soils that are highly susceptible to erosion due to wildfires, overgrazing, or extensive land development.

3.1.1.2 Creek and Floodplain Conditions

Under present conditions, the creek meanders through the coastal floodplain in a deep, highly incised channel between Gaviota Pass and the existing bridge (Figure 17). The channel varies in width from 30 to 150 feet, with several large oxbows. The channel is 10–15 feet deep at the northern end along Highway 101. The channel depth decreases from about 10 feet to 6 feet near the existing bridge. The current deeply incised channel was formed during the 1995 El Nino storms. Prior to 1995, the creek channel meandered through the floodplain in several smaller channels. The northern portion of the channel was straightened for the construction of Highway 101 in the 1950s. A review of historical photographs indicates that the alignment of Gaviota Beach Road and the location of the bridge over the creek have remained constant over the decades. The alignment of the lower creek has not changed substantially in over 60 years. In addition, the size and location of the estuary at the mouth of the creek have also remained relatively constant.

3.1.1.3 Hydrology

A U.S. Geological Survey (USGS) stream gauge (11120550) was located on Gaviota Creek near Highway 101 during the period 1967–1986). This period of record is insufficient to develop a flood frequency analysis. WRECO (2003) utilized three different methods to develop estimates of discharge from Gaviota Creek. The most accurate method was to use the stream gage record from a nearby creek to extend the Gaviota Creek flow record for frequency analysis. Annual peak flow data were available from 1941 to 2000 for USGS Station 11120500 on San Jose Creek in Goleta, which has a flow record that exhibits a good correlation to the Gaviota Creek record. The San Jose Creek flow data before 1967 and after 1986 were adjusted for watershed size and added to the record for Gaviota Creek. The Log-Pearson Type III method was then applied to the extended flow record to determine the discharges for various return intervals (Table 4).

Table 4
Estimated Discharges of Gaviota Creek at the Bridge Site

Flow Event (Flood Frequency)	Discharge (Cubic Feet Per Second)	Water Depth (Feet)	Velocity (Feet Per Second)
2	1,200	16.1	4.69
10	4,800	18.4	6.66
25	7,000	19.5	7.48
50	8,800	20.1	8.07
100	10,600	20.8	8.56

Source: WRECO 2003.

The project area is in and adjacent to a Special Flood Hazard Area: approximately Zone A, no Base Flood Elevation (BFE) provided. The WRECO study estimates the BFE to be 20.8 feet.

3.1.1.4 Flood History

The annual peak discharge from Gaviota Creek is presented in Chart 2 for the period 1941 to 2000. Major flood events occurred during the following years: 1943, 1952, 1962, 1973, 1983, 1992, 1995, and 1998. On average, these flood events occurred every 7 years.

3.1.1.5 Water Quality

Gaviota Creek is located in the South Coast Hydrologic Area, as described in the Regional Water Quality Control Board's Basin Plan for the Central Coast. The Basin Plan includes goals, objectives, and policies to protect water quality in surface and groundwater. The RWQCB improves water quality through its permitting program for certain discharges, watershed planning programs, education, and enforcement authorities. The Basin Plan identifies beneficial uses for each waterbody in the Central Coast Region and includes policies to protect these beneficial uses. The beneficial uses for Gaviota Creek are Agricultural Supply (AGR), Industrial Service Supply (IND), Ground Water Recharge (GWR), Freshwater Replenishment (FRSH), Water Contact Recreation (REC 1), Non Contact Water Recreation (REC 2), Commercial and Sport Fishing (COMM), Warm Fresh Water Habitat (WARM), Cold Fresh Water Habitat (COLD), Estuarine Habitat (EST), Wildlife Habitat (WILD), Preservation of Biological Habitats of

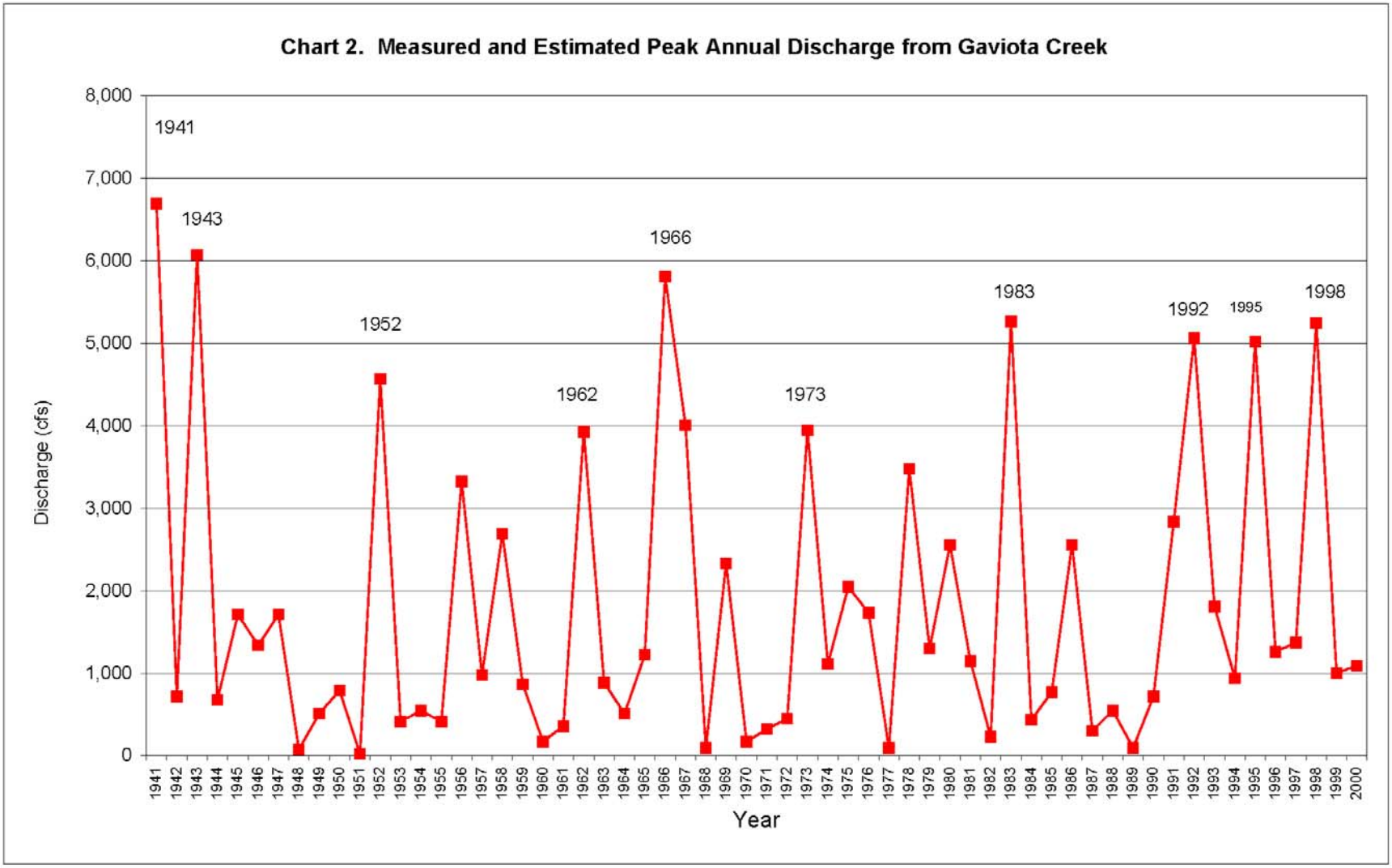


Chart 2. Measured and Estimated Peak Annual Discharge from Gaviota Creek
Discharge (cfs)
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
1941
1943
1952
1962
1966
1973
1983
1992
1995
1998
Year

Back of Chart 2.

Special Significance (BIOL), Rare, Threatened, or Endangered Species (RARE), Migration of Aquatic Organisms (MIGR), and Spawning, Reproduction, and/or Early Development (SPWN).

State Parks conducted limited stream water quality monitoring in 1997–1998 for Gaviota Creek. The following data were collected from May 1997 to August 1998 at up to 10 locations along the creek from the ocean to Gaviota Pass: water temperature, pH, and nitrate. The recorded levels of these parameters and constituents were representative of a mostly undeveloped watershed. Although the values varied with the seasons, they remained at or below water quality objectives from the Basin Plan.

3.1.2 Potential Impacts – No Action Alternative

Under this alternative, the current bridge would remain in place and would be maintained as necessary by the County. Based on past experience, winter stream flows would overtop the bridge several times during a normal winter, depositing sediment on the bridge and road and flooding the Park entrance. The duration of the flooding and the depth of water would vary from event to event. However, the flooding is likely to cause at least short-term closures of the road and the Park.

Under this alternative, public safety would continue to be compromised by dangerous conditions at the crossing during flood events. Specific flooding hazards associated with the current bridge and the No Action Alternative include the following:

- During flood flows when water is passing over the road, some drivers may try to drive through the flowing water when traveling to and from Hollister Ranch. There is a risk that the flows could sweep the vehicle downstream and result in possible injury or mortality.
- When flood flows are sufficient to block passage over the bridge, the residents of Hollister Ranch are stranded and can only leave the ranch by crossing the railroad bridge on foot. This is a highly dangerous and illegal action, but is used when there are emergency conditions in which individuals must leave the ranch for medical assistance and the bridge is not passable. This situation occurred on at least three occasions in winter 2004/2005.

3.1.3 Potential Impacts – Proposed Action

3.1.3.1 Change in Flooding Limits

Under current conditions, stream flow in the creek channel overtops the banks with a 10-year event and is conveyed onto the floodplain. Upstream of Gaviota Beach Road, floodwaters that overtop the banks have historically intercepted the road and traveled in a north-to-south direction down the road bed to the bridge site where these flows return to the creek channel, and/or are conveyed through the Park entrance into the campsites (Figure 17). Flood flows do not typically flow across the floodplain on the east side of the road because they are intercepted by the road bed, and because the flood flows slow substantially in this area, depositing sediments on both sides of the road that prevent the formation of west to east overflow channels.

The proposed bridge and roadway would modify the Gaviota Creek floodplain by preventing high storm flows in the creek from overtopping the road and traveling along the road. All flood flows would be directed under the new bridge (Figure 18). The proposed bridge and roadway

would slightly reduce the extent of flooding on the east side of Gaviota Beach Road. However, as noted above, this portion of the floodplain is not typically inundated from flood flows.

The proposed action would not reduce the extent and depths of flooding in the Park downstream of the bridge, as the floodplain boundaries would not be altered in this area. The Park campsites and day use areas are located well below the base flood elevation and are subject to flooding on a regular basis as flood flows overtop the western bank of the creek downstream of the bridge. The risk of flooding downstream of the bridge would not change with the proposed action because water surface elevations would return to pre-project conditions downstream of the bridge.

The water surface elevations with the proposed bridge would be higher upstream of the bridge for several hundred feet (Figure 19). This rise in water surface is due primary to the accumulation of sediments in the channel immediately upstream and downstream of the current bridge, which has acted like a dam over the past 6 years. Under the proposed action, about 7,500 cubic yards of accumulated sediment would be removed from the bridge site to create a continuous flow line from the upstream reach of the creek to the downstream reach (Figure 19). The removal of the sediments would restore the natural flow line and channel obstructions that cause bank erosion and overbank flooding. A natural meandering low-flow channel, without obstructions, would be formed through the bridge site, and the natural sediment transport processes would be allowed to return to the lower watershed.

National Flood Insurance Program requirements at 44 CFR Part 65.3 state that as new floodplain information becomes available, but not later than 6 months, the community must notify FEMA so that the changes can be incorporated into the Flood Insurance Rate Map. Therefore, the County will submit the WRECO study to FEMA as a Letter of Map Revision.

3.1.3.2 Downstream Bank Erosion

The presence of the bridge and elevated roadway approach would concentrate flows in Gaviota Creek under the new bridge. The increase in the volume of flow under the bridge and the free flow conditions would slightly increase flow velocities at and near the bridge, as shown in the hydraulic modeling performed for the County by WRECO (2003), and summarized in Table 5.

Table 5
Existing and Predicted Velocities Near the Bridge Site

Location	Water Velocities (Feet per second)		
	Existing	With Bridge	Difference
Upstream of Bridge Site			
100-year event	6.60	6.70	+0.10
50-year event	6.34	6.47	+0.13
25-year event	5.68	6.20	+0.52
10-year event	5.58	5.15	-0.43
2-year event	4.46	4.32	-0.14
Bridge Site			
100-year event	7.95	8.61	+0.66
50-year event	7.39	8.12	+0.73
25-year event	5.21	7.52	+2.31

Table 5
Existing and Predicted Velocities Near the Bridge Site

Location	Water Velocities (Feet per second)		
	Existing	With Bridge	Difference
10-year event	5.10	6.70	+1.60
2-year event	5.05	4.72	-0.33
Downstream of Bridge Site (Campground)			
100-year event	9.14	9.14	0
50-year event	11.42	8.75	-2.67
25-year event	8.28	8.28	0
10-year event	7.33	7.33	0
2-year event	3.96	3.96	0

Source: WRECO 2003.

Under current conditions, erosive flows (over 5–6 fps) occur upstream of the bridge, at the bridge, and downstream of the bridge (adjacent to the Park campground) for 10-year and greater storm events. The increase in flow velocities with the bridge (see Table 5) would be minor (WRECO 2003). The proposed bridge is not expected to increase bank erosion above the bridge, at the bridge, or below the bridge (along the west bank adjacent to the Park parking lot and campground). However, the proposed action does include bank protection immediately downstream of the bridge to protect from the erosive creek flows (which would occur with or without the project). This bank, which is adjacent to the Park overflow parking lot, has been subject to repeated bank erosion from flood events. The proposed buried rock protection would provide a higher level of resistance and protection than previous efforts.

3.1.3.3 Construction-Related Erosion and Sedimentation

Construction work would expose soils to erosion and possible sedimentation of Gaviota Creek downstream of the work site, both of which could adversely affect water quality. All work in the creek would occur outside the rainy season to avoid direct exposure to rainfall and runoff. Hence, the primary erosion and sedimentation impact would occur from rainfall and runoff impinging on inactive work areas during the winter season. These areas would be stabilized by various erosion control BMPs in accordance with the state-required SWPPP for the project, such as erosion control mats, catchment basins, hay bales, and silt fences. The state-required SWPPP would protect creek water quality from excessive sedimentation or turbidity impacts during construction. Hence, the amount of erosion and sedimentation is expected to be minimal. Environmental Protection Measure W-1, "Storm Water Pollution Prevention Plan (Section 2.2.4), provides additional measures and BMPs to increase the effectiveness and coverage of erosion control in the state-required SWPPP.

Limited work (that would not involve grading) would be allowed outside the creek along the roadway approach during the winter. Special BMPs would be required under the SWPPP to ensure that no polluted runoff or sediments would be discharged to the creek.

Construction equipment, haul trucks, material stored in staging areas, and refueling operations have the potential to adversely affect water quality in Gaviota Creek in the event of an accidental

spill. The BMPs for prevention of non-storm-water discharges, which must be included in the state-required SWPPP, would provide standard measures to prevent such spills.

3.1.3.4 Storm Water Runoff from Normal Road Use

Vehicles traveling along the existing road and bridge contribute to storm water pollution through leakages of oil and grease from vehicles and wear from tires. The proposed action would not increase the volume of traffic utilizing the road and bridge and for this reason would not have any effect on the current loading of pollutants on the roadbed. Hence, the proposed action would not result in any adverse water quality impact when compared to current baseline conditions.

3.1.3.5 Effect on Floodplain Hydrologic Functions

As noted above, the proposed action would modify the floodplain limits in the lower watershed. The change in flow patterns would reduce the 10- and 100-year floodplain limits (Figure 20). There would be a slight increase in the 10-year floodplain upstream of the bridge. However, a larger portion of the 10- and 100-year floodplains would be reduced east and downstream of the bridge: about 3.93 acres. The total net change in floodplain boundaries is a 3.24-acre reduction, as follows:

	Gain (acres)	Loss (acres)	Net Change (acres)
10-year floodplain	0.69	3.40	-2.71
10 to 100-year floodplain	-	0.53	-0.53
Total=	+0.69	-3.93	-3.24

The floodplain area that would be reduced downstream of the road contains a mixture of native riparian plants, ornamental trees from a historical ranch that occupied the floodplain area, and non-native weeds. This area was burned during the June 2004 wildfire, which killed willows and coyote brush shrubs in the area. This area is currently dominated by noxious weeds, which have invaded the floodplain. These include castor bean, thistle, black mustard, white sweetclover, hemlock, and German ivy. In addition, wild pigs have caused substantial ground disturbance as they dig in the ground for roots.

Floodplains provide a variety of functions in a watershed, for natural ecosystem processes as well as for human development in the lower watershed. The major functions of a floodplain are described below:

- **Function 1. Reduce Flooding.** Floodplains typically reduce flooding in downstream areas through the following mechanisms: (1) they provide additional capacity to convey stream flow, which in turn reduces downstream flow velocities and erosive forces; and (2) they provide temporary storage of floodwaters which reduces peak discharge and water surface elevations in downstream areas.
- **Function 2. Maintain Groundwater.** Floodplains may provide overbank areas where floodwaters can percolate and recharge the local alluvial groundwater basin, if present. The importance of this function is directly related to the ecological importance or human uses of the alluvial groundwater.

- **Function 3. Contribute to Sediment Dynamics.** Floodplains may provide long-term or short-term storage of sediments when flood flows deposit sediments. This storage can reduce flood hazards in downstream areas or protected estuaries. Conversely, floodplains can become a source of sediments during certain flow events, which can be important to maintain downstream floodplains or beach sand.
- **Function 4. Improve Surface Water Quality.** Floodplains can provide overbank areas where floodwaters are filtered by flowing through vegetation before returning to the creek, thereby improving downstream water quality.
- **Function 5. Support Riparian, Wetland, and Aquatic Habitats.** Floodplains provide substrate and hydrologic conditions for floodplain riparian habitats, which typically contain a variety of biomass, vegetative structure, and persistence and which in turn, support high wildlife diversity. Floodplains also provide cover near active creek channels for wildlife movement and habitat connectivity. Floodplains may contribute to base flows to creeks, which prolong aquatic habitats and growth periods for wetlands. Finally, floodplains may support special interest species.
- **Function 6. Provide Recreation Opportunities.** Floodplains provide a shaded creek-side environment with direct access to creek- and aquatic-related recreation, such as what is available at Gaviota State Park.
- **Function 7. Provide for Agriculture.** Floodplains in large watersheds provide high soil fertility through repetitive flooding events and attendant soil development. However, floodplain agriculture is also vulnerable to flooding.
- **Function 8. Provide for Urban and Industrial Development.** Floodplains are a valued land form for land development due to their flatness and proximity to water; however, their value for development is often offset by the cost of flood protection.
- **Function 9. Provide for Infrastructure.** Floodplains are valuable for infrastructure corridors and connections (e.g., for electricity, water supply, sewerage, roads, rail lines, and bridges) due to the ease of installation on floodplains.
- **Function 10. Provide Mineral Resources.** Floodplains often provide a readily accessible source of aggregate materials (e.g., sand and gravel) for roads and structures, and these materials are renewed by floods.

The impacts of the reduction in the floodplain downstream of Gaviota Beach Road on hydrologic functions (functions 1–4) as a result of the proposed action are addressed below. Impacts to other functions are addressed in other chapters in Section 3.0.

Impact on Function 1: Reducing Flooding

The affected floodplain area may provide some flow capacity during flood flows that would reduce downstream flow velocities and erosive forces. However, this function is not expected to be well developed for this area, as it is only flooded during very high flow events. Under such events, the entire lower floodplain downstream of the bridge is flooded, including the Park. Under these high-water conditions, flow velocities are reduced (to less than erosive levels) compared to more moderate flows. Hence, this area of the floodplain is unlikely to substantially contribute to reducing the downstream velocities that cause bank erosion along the banks of the

Park. The hydraulic study for the project (WRECO 2003) indicates that the proposed action and its associated reduced floodplain area would not increase flow velocities beyond 150 feet from the bridge and would not create erosive flows. Hence, the reduction in floodplain is not expected to substantially affect this function.

The affected floodplain may provide temporary storage of floodwaters, which reduces peak discharge and water surface elevations in downstream areas. However, the effect of the floodplain would be limited, as the affected floodplain area is sloped (approximately 4 percent) to quickly return overbank flood flows to the creek; no depressional storage is present. Also, most of the overbank flows to this portion of the floodplain are intercepted by the road and discharged directly to the creek at the bridge site with no flow attenuation. As noted above, the hydraulic modeling showed that the proposed action would not affect flow velocities beyond 150 feet downstream of the bridge, nor increase the flood elevations.

Impacts on Function 2: Maintaining Groundwater

The affected floodplain may contribute to this function, but its effect would be limited, as the floodplain is sloped (approximately 4 percent) towards the creek, which prevents storage in the area. Also, most of the overbank flows to this portion of the floodplain are intercepted by the road and discharged directly to the creek at the bridge site with no flow attenuation. Groundwater is not pumped in the floodplain.

The proposed action would remove this function. However, this impact would be minimal for two reasons. First, the affected floodplain has limited capacity to fulfill this function, as noted above. Second, groundwater levels in the affected floodplain are more likely controlled by the estuary and creek water levels, which create a steady groundwater table.

Impacts on Function 3: Contribution to Sediment Dynamics

The affected floodplain has functioned as a sediment deposition zone for many decades. The floodplain elevation appears to be increasing over time, and increased elevation would effectively reduce this function and convert this area to uplands until a catastrophic flood event removes the accumulated sediments and resets the floodplain. It is not known if the storage of sediment in this floodplain is important to maintain the health of the estuary. Observations after the 1998, 2001, 2003, and 2005 floods indicated that the estuary had not been reduced in size or depth.

The proposed action would remove the sediment storage function of this area of the floodplain during flood flows. These sediments would be conveyed through the bridge opening and spread across the remaining portions of the floodplain. The hydraulic modeling (WRECO 2003) indicates that high flows downstream of the bridge, with or without the project, have sufficient velocities to convey sediments to the ocean. The overall effect on the sediment balance at the end of the floodplain is uncertain, but available data and analyses suggest that there would not be a substantial shift in sediment deposition or scouring. Instead, the proposed action is likely to recreate a more natural sediment transport condition due to the wider and unconstrained creek channel at the bridge site.

Impacts on Function 4: Improving Surface Water Quality

The affected floodplain does not appear to fulfill this function, as the floodplain is only inundated during very high flow events, when general water quality is poor, and the affected floodplain does not appear to have suitable conditions for slow bio-filtering. The removal of this portion of the floodplain would have a minimal impact on water quality in the creek or estuary, as the affected floodplain area does not appear to have important role in enhancing water quality in the creek.

3.1.3.6 Compliance with Executive Order 11988 (Floodplain Management)

Executive Order 11988 (Floodplain Management) states:

> Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities…. If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains.

FEMA's regulations for complying with Executive Order 11988 are found at 44 CFR Part 9.

In compliance with Executive Order 11988, FEMA considered the proposed action's impacts to the floodplain. FEMA applies the Eight-Step Decision-Making Process to ensure that it funds projects that are consistent with Executive Order 11988. The NEPA compliance process involves essentially the same basic decision-making process to meet its objectives as the Eight-Step Decision-Making Process. Therefore, the Eight-Step Decision-Making Process has been applied through implementation of the NEPA process. FEMA published an Initial Public Notice at the declaration of disaster. FEMA would ensure publication of a Final Public Notice in compliance with Executive Order 11988 before implementation of the proposed action.

The functional nature of the project requires that it be located in the floodplain. The proposed action would reduce risk of flooding Gaviota Beach Road and reduce the flooding hazards for travelers to the Park and Hollister Ranch. The reduction in floodplain associated with the action would not substantially affect floodplain functions. For these reasons, the proposed action would preserve, to the extent practicable and consistent with the purpose and need of the proposed action, floodplain values.

The proposed project would reduce the repetitive damage associated with the existing bridge and reduce bank erosion along a portion of the Park. Although the modified road and new bridge would be located in the floodplain, the project has been designed to minimize impacts to the floodplain, and the project would not create any new flood hazards. Therefore, the project is consistent with this order.

3.1.4 Potential Impacts – Alternative Alignments

The two alternative alignments, the Easterly and the Westerly Alignments, would have the same effects on downstream bank erosion, floodplain limits, and construction-related erosion as the proposed action because the amount bridge and roadway design would be identical to that of the

proposed action but would be situated in a slightly different location. These alternatives would provide the same level of safe and reliable access across the creek and protection from the 100-year storm event as the proposed action.

3.1.5 Potential Impacts – Causeway Alternative

This alternative would provide the same level of safe and reliable access across the creek and protection from the 100-year storm event as the proposed action. It would likely have similar construction-related impacts on water quality as the proposed action. The causeway would not require earthwork to construct a new road embankment, so this alternative would reduce the potential for erosion. However, there would be a greater amount of temporary disturbance along the causeway during pier installation, as access would be required on both sides of the causeway. Also, much of the corridor would need to be cleared to install the piers. The amount of work in the existing creek to install the piers would be similar to that of the proposed action.

This alternative would not increase stream velocities downstream of the existing bridge location. It would also not reduce the floodplain. This alternative would create more natural conditions for sediment transport compared to the proposed action because it would allow the creek to meander across the entire floodplain.

3.1.6 Potential Impacts – Alternative Bridge Site

This alternative would provide the same level of safe and reliable access across the creek and protection from the 100-year storm event as the proposed action even though the bridge would have a small span.

This alternative could have greater construction-related impacts on water quality than the proposed action because of the substantially greater area that would be graded. It is estimated that about 5 acres would be cleared, grubbed, and graded along the new road in the Park compared to about 3 acres for the proposed action. This area would be exposed to erosion during construction. Construction of the new road would also likely involve more earthwork than the proposed action and require more stabilization of cut-and-fill slopes. The amount of work in the creek would be less than the proposed action because the crossing would be smaller. However, the existing bridge and roadway would be removed under this alternative, requiring work in the creek and floodplain, which could cause construction-related erosion.

This alternative would not increase stream velocities downstream of the existing bridge location. It would also not reduce the floodplain. This alternative would create more natural conditions for sediment transport compared to the proposed action because it would allow the creek to meander across the entire floodplain.

3.2 BIOLOGICAL RESOURCES

3.2.1 Existing Conditions

3.2.1.1 Habitats at and Near the Project Site

The distribution of habitat types at and near the project site is shown on Figures 21a and 21b. A brief description of each habitat type is presented below. These descriptions were based on conditions prior to the Gaviota Fire on June 5, 2004. The fire burned 7,440 acres through a substantial portion of the Gaviota State Park riparian woodland and coastal sage scrub habitat areas. It appears that most of the large willow trees in the floodplain were killed, as they are not exhibiting any re-sprouting. The understory of the previously dense and continuous willow woodland is now dominated by noxious weeds which have invaded the floodplain, including castor bean, thistle, black mustard, white sweetclover, hemlock, and German ivy.

Riparian Woodland

Riparian woodland is the dominant vegetation along Gaviota Creek upstream of the creek crossing. This habitat is characterized by dense stands of arroyo willow trees at 10 to 20 feet high with scattered mature red willow, sycamore, and black cottonwood trees. Common understory species include creek clematis, mugwort, hoary nettle, blackberry, coyote brush, California figwort, wild cucumber, and poison oak. Invasive exotic species such as castor bean, German ivy, tree tobacco, ice plant, pepper tree, and eucalyptus are also present.

Willow Woodland

Arroyo willow woodland is most abundant downstream of the creek crossing and consists of dense stands of arroyo willow trees mixed with red willow. It occurs in a mosaic with coyote brush scrub, mule fat scrub, exotic species such as pepper tree, tree tobacco, bristly ox-tongue, fennel, black mustard, castor bean, ice plant, eucalyptus trees, pepper trees, and non-native grasses.

Willow Scrub

Willow scrub occurs along the creek banks and recently scoured stream terraces. Willow scrub is dominated by arroyo willow with scattered narrow-leaved willow, red willow, and mule fat.

Mule Fat Scrub

Mule fat scrub occurs on the margins of the active channel. It also occurs along the outer edges of the riparian corridor mixed with coyote brush scrub and ruderal vegetation. Mule fat occurs with scattered common native plants, including western ragweed, horseweed, cocklebur, mugwort, California sagebrush, telegraph weed, willow, and exotic species such as tree tobacco, smilo grass, castor bean, bristly ox-tongue, yellow sweet clover, poison hemlock, fennel, and black mustard.

Emergent Wetland

Emergent wetlands occur within and adjacent to Gaviota Creek. Native species occurring in this habitat include cattail, willow herb, watercress, water fern, common cyperus, spike rush, iris-leaved rush, spiny rush, low clubrush, common threesquare, smooth scouring rush, and giant horsetail. Non-native species mixed with native emergent wetland species include white sweet clover, barnyard grass, bristly ox-tongue, cocklebur, curly dock, rabbitsfoot grass, weedy cudweed, and brass buttons.

Coastal Salt Marsh

Coastal salt marsh dominates the flat terrace along the western edge of the estuary and occurs within the willow woodland just upstream of the estuary. At lower elevations, this community is dominated by pickleweed and jaumea, and at higher elevations saltgrass alkali heath and alkali heliotrope are dominant with scattered willow, mule fat, coyote brush, and ruderal vegetation such as Australian saltbush, black mustard, poison hemlock, fennel, and non-native grasses.

Coastal Sage Scrub

Coastal sage scrub is present on the bluffs and slopes outside of the riparian corridor on both sides of Gaviota Creek. Coyote brush and giant rye dominate coastal sage scrub with scattered occurrences of blue elderberry, figwort, California everlasting, purple sage, cliff aster, coastal encelia, seacliff buckwheat, California buckwheat, white nightshade, California fuchsia, lemonade berry, coast prickly pear, and bush monkey flower.

Coyote Brush Scrub

Coyote brush scrub occurs along the margins of willow and riparian woodland on both sides of Gaviota Creek. It is most developed along the outer western edge of the riparian woodland area, along the floodplain east of the entrance road and the boundary between the campground and willow woodland.

Eucalyptus Grove

A small eucalyptus grove is located along the park entrance road. Approximately 12 trees are on the east side of the road and 7 trees on the west side with a few scattered trees in the eastern floodplain near the entrance road. The understory consists mostly of ice plant, with a few scattered mugwort, mule fat, and coyote brush. A larger eucalyptus grove dominates the bluff located near the beach on the west side of the Park.

Non-native Grassland

Non-native grassland is not found in large areas within the Gaviota Creek project area. A few small patches of non-native grassland are located along both sides of the Park entrance road and along the middle stream terrace in the upstream reach of the project area.

Ruderal Vegetation

Ruderal vegetation is present in various densities throughout the Park. Ruderal vegetation borders both sides of the Park entrance road and includes black mustard, castor bean, prickly ox-tongue, bur-clover, fountain grass, yellow star thistle, poison hemlock, smilo grass, Geranium molle, English plantain, and Italian thistle mixed with non-native grasses and scattered pepper trees.

3.2.1.2 Aquatic Habitat

Gaviota Creek generally flows from January through April, but has very low flow from June through November. During years with substantial runoff, the channel in the floodplain above and below Gaviota Beach Road is subject to varying levels of channel bed and bank erosion, overbank flooding and sediment deposition, and in-channel sedimentation. The channel bed consists of loose, well-drained sand with deposits of cobble. Depositional stream terraces consist mostly of sand with scattered cobble.

Aquatic habitats along the creek channel include riffles, pools, and runs. The occurrence of these aquatic habitats is shown on Figure 22 based on surveys conducted in May 2004. The low-flow channel within the floodplain ranges from 5 to 25 feet wide. The existing creek crossing has altered the river hydrology, and heavy soil deposition is occurring on the upstream side of the crossing. This deposition has created the largest pool within the project area, up to 5 feet deep, about 10 feet wide, and 112 feet long upstream of the crossing. It flows under the crossing through a small opening 1 foot deep by 4 feet wide. Other pools range from 1 to 3 feet deep, riffles range from 0.2 to 0.5 feet deep, and runs range from 0.2 to 1.5 feet deep. Upstream of the crossing there are two dry high-flow channels along the eastern edge of the floodplain between the stream terrace and riparian woodland. Downstream of the crossing there is a series of dry high-flow channels to the north of the main channel that run through willow woodland and stream terraces.

3.2.1.3 Wetlands

Under Section 404 of the Clean Water Act, the USACE regulates the discharge of fill and dredged material into "waters of the United States," which are broadly defined in 33 CFR 328.3(a) to include navigable waters and others, such as intermittent streams and wetlands adjacent to such streams. Gaviota Creek is considered "waters of the United States" due to its connection to the Pacific Ocean. The lateral limits of the "waters" along the creek at the project site are defined by both a visible ordinary high water mark on the creek banks and by vegetated wetlands on lower stream terraces. The former occurs along the lower sections of the creek banks and is evident by eroded banks, exposed cobbles, water-borne deposits of vegetation and woody debris, and water marks. Jurisdictional wetlands are present on the portions of the creek bed with sandbars and on the margins of the creek bed where wetland plants (e.g., watercress, willows, and sedge) persist despite the scouring effects of winter stream flows.

3.2.1.4 Threatened and Endangered Species

Several species officially designated as rare, threatened, or endangered by USFWS and NOAA Fisheries occur at the Park and at the project site. The occurrence of the listed species at and near

the project site was based on a review of previous surveys by State Parks from 1997 to 2001. State Parks and USFWS biologists conducted these field surveys to identify the locations of special-status species along Gaviota Creek from 1998 to 2001. Nationwide Infrastructure Support Technical Assistance Consultants (NISTAC), a consultant to FEMA, conducted protocol surveys at and near the project site in the spring and summer of 2004 for the red-legged frog and the least Bell's vireo. Presence/absence surveys were also conducted for the willow flycatcher and the tidewater goby. Information on the occurrence of southern steelhead trout at the project site was based on information from State Parks. The following information is derived from FEMA's Biological Assessment for the proposed action (NISTAC 2005).

Southern Steelhead

Southern steelhead trout *(Oncorhynchus mykiss)* is a federally endangered species. The southern steelhead populations that occur from Los Angeles County to northern Santa Barbara County constitute the Southern California Evolutionarily Significant Unit (ESU), which has been designated as an endangered species by the NOAA Fisheries. Southern steelhead is an anadromous fish species that occurs in the coastal streams and creeks of Central and Northern California as well as southern Oregon. When there are substantial flows from coastal streams and sandbars are open, steelhead trout migrate upstream from the ocean to spawn from December through May. They spawn in clear, cool, well-oxygenated streams in areas of suitable substrate (clean gravels), depth (usually greater than 0.8 feet deep), and water velocity. Adults and juveniles immigrate back to the ocean from February through May. Juveniles prefer shallow riffle areas of streams. Juveniles and adults utilize pools for summer refuges in small streams during low-flow conditions.

The Gaviota Creek watershed supports a trout population, which may comprise a mixture of resident rainbow trout and occasional southern steelhead trout. There are many passage impediments in the watershed. However, suitable spawning habitat appears to be present in the upper tributaries. Spawning habitats are absent from the coastal floodplain. The occurrence of suitable rearing habitat is not fully known. In 2001, State Parks located several trout in deep plunge pools in the lower reaches of the watershed. The nearest location to the project site was a plunge pool at the pipeline crossing, about 2,000 feet upstream of the project site. Based on NISTAC surveys of the creek in 2004, suitable oversummering habitat for southern steelhead is not present within 2,000 feet either upstream or downstream of the bridge site. There are no records of steelhead oversummering in the estuary, though it could occur.

The frequency with which adult steelhead attempt to migrate up Gaviota Creek is unknown. The current bridge is a passage barrier to steelhead, and as such, it is unlikely that any steelhead have migrated up the creek since 1998. The accumulation of sediment upstream of the existing bridge has created a migration barrier that is considered severe according to the Conception Coast Project Steelhead Study (Stoecker et al. 2002). Other barriers occur in the middle and upper watershed. Stoecker et al. (2002) identified 49 impediments and barriers to steelhead movement in the watershed, including six impassable or extremely high barriers and three high barriers. The existing bridge was considered a "high" barrier in 2002 and would likely now be considered an impassable barrier.

Tidewater Goby

The tidewater goby *(Eucyclobobius newberryi)* is a federally endangered species and state species of special concern. It is a small fish that inhabits brackish water lagoons, estuaries, and lower reaches of coastal streams in California. Historically, the tidewater goby occurred in at least 110 California coastal lagoons from Tillas Slough near the Oregon border to Agua Hedionda Lagoon in northern San Diego County (USFWS 2004). Now, the tidewater goby is known to occur in about 85 locations, though the number of sites fluctuates with climatic conditions. Today, the most stable populations are in lagoons and estuaries of intermediate sizes (2 to 50 hectares) that have remained relatively unaffected by human activities (USFWS 2004).

Tidewater gobies are relatively small and rarely exceed 50 mm in length. They are generally found in shallow lagoons and lower stream reaches where the water is slow moving or fairly still with fairly high dissolved oxygen levels. Gobies prefer water that is brackish to fresh but are capable of living in saline water ranging from 0 to over 50 parts per thousand salinity and at temperatures of up to 23 degrees Celsius. Reported water depth for goby habitat ranges from 25 to 100 cm. Suitable water conditions for nesting have been reported as 5 to 10 parts per thousand salinity and 18 to 22 degrees Celsius, with a sand and/or mud substrate with abundant emergent and submerged vegetation.

The tidewater goby breeding season peaks from late April or May to July and can continue into November or December depending on the seasonal temperature and rainfall. Males begin the breeding ritual by digging burrows in clean coarse sand. The females then deposit the eggs into the burrows. The males remain in the burrows to guard the eggs. The vertical burrow is approximately 10 to 20 cm into a sandy substrate, usually in water 25 to 50 cm deep. Larvae emerge in 9 to 10 days, when they are 5 to 7 mm standard length and live in the water column among vegetation until they are 15 to 18 mm standard length, at which time they become benthic. The males frequently forgo feeding during this period, possibly contributing to the mid-summer mortality noted in some populations. Tidewater gobies feed on small invertebrates, usually mysids, amphipods, ostracods, snails, and aquatic insect larvae, particularly dipterans. Young tidewater gobies probably feed on unicellular phytoplankton or zooplankton (USFWS 2004).

During surveys conducted from 1998 to 2001, Park biologists observed tidewater gobies from the middle of the estuary to within about 250 feet of the bridge. In 2004, NISTAC observed tidewater gobies about 140 feet downstream of the bridge. It is unlikely that tidewater gobies occur upstream of the existing crossing because of the steep gradient created by the bridge.

Red-legged Frog

The California red-legged frog *(Rana aurora draytonii)* is a federally threatened species. It is restricted to aquatic habitats such as creeks, streams, and ponds that have a source of perennial water. It occurs primarily in pools at least 2 feet deep with dense emergent or overhanging vegetation. The historical range of the red-legged frog extended on the coast from the vicinity of Point Reyes National Seashore and inland from the vicinity of Redding southward to northwestern Baja California, Mexico (USFWS 2002). This species has sustained a 70 percent reduction in its geographic range in California (USFWS 2002). Currently, California red-legged frogs are primarily limited to small coastal drainages between Santa Barbara and areas just north

of San Francisco (Jennings and Hayes 1994). The largest extent of currently occupied habitat is found in Monterey, San Luis Obispo, and Santa Barbara Counties (USFWS 2002).

Continuing loss of freshwater habitat and the introduction of non-native predatory fish species and bullfrogs are causes of the continuing population decline of this species. Much evidence indicates that the introduced bullfrog may prey upon and displace red-legged frogs through competition for resources. The loss of riparian and emergent vegetation results in increased water temperature, which favors bullfrog reproduction (USFWS 2002).

Red-legged frogs are generally found along marshes, streams, ponds, and other permanent sources of water, where dense scrubby vegetation such as willows, cattails, and bullrushes dominate and water quality is good. Typical habitat for this species is a combination of dense, shrubby, or emergent riparian vegetation closely associated with deep water (more than 2.3 feet deep) and the absence of predatory fish and bullfrogs (USFWS 2002). Upland habitats with dense vegetation may be important sheltering habitat during winter. During the dry season, red-legged frogs occupy small mammal burrows and moist leaf litter. This species has been found up to 100 feet from water in adjacent riparian vegetation.

Breeding sites occur along watercourses with pools that remain long enough for breeding and the development of larvae. Breeding time depends on winter rains, but is usually between late November and late April. Breeding sites require water that remains long enough for breeding purposes and larval development. Egg masses are laid in permanent bodies of water.

Eggs hatch in 6 to 14 days, and approximately 3.5 to 7 months later, the tadpoles develop into frogs. Red-legged frogs must have 11 to 20 weeks of permanent water for larval development, as well as appropriate refugia for aestivation periods. Appropriate refuges for red-legged frogs include small mammal burrows, downed logs or vegetation, and dense vegetation/litter layers.

Tadpoles and young frogs depend mainly on invertebrates as a food source, while the diet of adult frogs consists of Pacific tree frogs *(Hyla regilla),* California mice *(Peromyscus californicus),* and insects. Adult frogs are mainly active at night, and may be active year-round in areas with permanent water.

The California red-legged frog occurs throughout Gaviota Creek (above the estuary), as evidenced by the sightings by State Parks and USFWS biologists during their 2001 surveys. NISTAC conducted protocol field surveys for red-legged frogs in late April and early May 2004. Protocol-level surveys were completed to comply with the USFWS requirements needed to confirm the presence or absence of this species. Twenty-nine California red-legged frogs were observed along Gaviota Creek during the night survey in May 2004. Most of the frogs appeared to be adults. All but four were observed upstream of the creek crossing. Fifteen were seen or heard within the large pool immediately upstream of the crossing. Also, during the spring 2004 aquatic surveys, an egg mass identified as California red-legged frog was observed approximately 100 feet downstream of the creek crossing. No tadpoles were seen during the day or night surveys.

Gaviota Tarplant

The Gaviota tarplant *(Deinandra increscens* ssp. *villosa)* is a federal and state endangered species that occurs in coastal scrub and valley and foothill grassland. The nearest known location of this species is 0.7 miles east of the project site north of Highway 101. This species is not

known to occur on the Gaviota Creek floodplain and is not expected to occur in the disturbance zones associated with the proposed project.

Least Bell's Vireo

The least Bell's vireo *(Vireo bellii pusillus)* is a federal and state endangered species. No least Bell's vireos were detected at the project site during protocol surveys in 2004, and there are no records of this species occurring in Gaviota Creek. The Gaviota Creek floodplain (prior to the 2004 fire) has suitable to good quality habitat patches, though the area has too much shade and dense vegetation to qualify as high-quality habitat. The nearest population is located along the Santa Ynez River upstream of Gibraltar Reservoir.

Southwestern Willow Flycatcher

The southwestern willow flycatcher *(Empidonax traillii extimus)* is a federal and state endangered species. No southwestern willow flycatchers were detected during surveys in 2004, and there are no records of this species occurring at the Park or in its vicinity. The habitat at the project site is not high-quality habitat for nesting southwestern willow flycatchers. The majority of the habitat lacks suitable understory and/or structure, and areas that are potentially suitable are small and disjunct. The nearest population of willow flycatchers is along the Santa Ynez River downstream of the City of Buellton and a lone male on Vandenberg Air Force Base for the last few years. In a given year, approximately 15 pairs of willow flycatcher may be breeding along the Santa Ynez River (Compton 2004).

Peregrine Falcon

The peregrine falcon is a state endangered species. There are historic nest sites at Gaviota Pass (Lehman 1994). In 2001, a pair with young was detected north of the Gaviota Pass area. An adult and two juveniles were detected flying over the sight on July 1, 2004. The juvenile birds were calling insistently, apparently begging for food from the adult. The birds were over the Park for approximately 5 minutes before flying away to the southwest. There are no records of peregrine falcons breeding in the Park, but they use the open coastal areas for foraging habitat. This species is not expected to forage or rest in the Gaviota Creek floodplain.

3.2.1.5 Other Special-Status Species

Special-Status Plant Species

Special status plant species are defined as non-listed species that are included on List 1B (rare and endangered species) in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Species of California. The potential occurrence of these species at the project site is described below.

Black-flowered Figwort *(Scrophularia atrata).* The black-flowered figwort is a CNPS 1B species and was recorded by the California Natural Diversity Data Base (CNDDB) along Highway 101 just south of Gaviota Pass. It occurs in coastal scrub, chaparral, coastal dunes, riparian scrub, and closed-cone coniferous forest. It is possible that the black-flowered figwort

occurs within the project area because there is suitable habitat and it was found about 0.8 miles upstream of the project site. However, it would be located outside the disturbance zone for the proposed action.

Davidson's Spearscale *(Atriplex serenana* var. *davidsonii).* Davidson's spearscale is a CNPS 1B species that occurs in coastal bluff scrub and coastal scrub in alkaline soils. The CNDDB shows this species as occurring 0.7 miles east of the project site, outside the disturbance zone for the proposed action.

Special-Status Wildlife

Special-status wildlife species are defined as Species of Special Concern designated by CDFG or other species of local interest. Their occurrence at the project site is noted below.

Monarch Butterfly. The monarch butterfly is a species of local interest. Monarch butterflies migrate to the Coast of Santa Barbara County in the autumn of each year. Winter roost sites extend along the coast from Northern Mendocino County to Baja California, Mexico. They aggregate in large numbers to overwinter in groves of trees (usually eucalyptus trees) near the coast. Breeding begins in the summer, when monarchs lay their eggs on Milkweed plants. There are two eucalyptus groves at the Park: (1) a large one situated on the hillside at the west end of the park and (2) a small grove along Gaviota Beach Road. The grove on the west side of the State Beach parking lot is identified by CNDDB as an autumnal roost site, though this site is not considered important monarch butterfly breeding habitat. The small grove along the road is not considered an autumnal roost site by CNDDB, though small numbers of butterflies may congregate in the grove in some years. No butterfly roosting was observed in these trees in the fall of either 2003 or 2004.

Arroyo Chub. Arroyo chub is a State Species of Concern. Arroyo chubs prefer slow-moving sections of rivers with a sand or mud substrate with warm water temperatures and algae, which they feed on. This species is found throughout Gaviota Creek and was observed in the pools directly upstream and downstream of the creek crossing in the spring 2004 surveys.

California Tree Frog *(Pseudacris cadaverina).* The California tree frog or chorus frog is a State Species of Special Concern that inhabits riparian woodland canyon streams and washes with quiet pools, rocks, and shade. Suitable habitat for this species is present along Gaviota Creek, though this species was not observed during the 2004 field surveys.

Coast Range Newt *(Taricha torosa torosa).* The Coast Range newt is a State Species of Special Concern found in riparian woodland. It is restricted to pools in the dry season, and during the wet season forages in chaparral and oak woodland within 0.5 miles of breeding sites. The Coast Range newt is not known to occur near the bridge site; however, it was observed during the State Parks biological surveys in 2001 along a tributary of Gaviota Creek in the upper watershed.

Two-striped Garter Snake *(Thamnophis hammondii).* The two-striped garter snake is a State Species of Special Concern. It is a highly aquatic species typically found near slow-moving creeks, streams, ponds, and coastal lagoons where there is perennial water and tadpoles, frogs, and small fish are present as a prey base. The two-striped garter snake was found throughout Gaviota Creek during the State Parks surveys. During a biological survey in spring 2004, a pair of two-striped garter snakes was observed along the stream terrace about 200 feet downstream of the crossing.

Silvery Legless Lizard *(Anniella pulchra pulchra).* The silvery legless lizard is a State Species of Special Concern that occurs in sandy soils under litter of oak woodland, chaparral, and coastal sage scrub. No records of this species are known within the Gaviota area, but due to the nature of this species, observation is difficult. Suitable habitat in the floodplain is minimal, consisting of small patches of disturbed coastal sage scrub, so it unlikely this species is present.

California Horned Lizard *(Phrynosoma coronatum frontale).* The California horned lizard is a State Species of Concern that occurs in grassland, chaparral, coastal sage scrub, and sandy soil habitats. Suitable habitat for this species along the creek and on the floodplain is minimal, so it is unlikely to occur at or near the project site.

Coastal Western Whiptail *(Cneimidophorus tigris multiscutatus).* The coastal western whiptail is a State Species of Special Concern. It is found in dense vegetation in a variety of habitats, including oak and riparian woodland, coastal sage scrub, and annual grassland. Suitable habitat for this species along the creek and on the floodplain is generally absent, so this species is unlikely to occur at or near the project site.

Southwestern Pond Turtle *(Clemmys marmorata pallida).* The southwestern pond turtle is a State Species of Special Concern. It occurs primarily in freshwater streams, ponds, and lakes and may live in intermittent streams where perennial pools are present. This species requires slow-moving water and appropriate basking sites (such as logs, banks, or other suitable areas above water level). The southwestern pond turtle is found throughout Gaviota Creek, and one was observed in the pool immediately downstream of the creek crossing in spring 2004.

Pallid Bat *(Antrozous pallidus).* The pallid bat is a State Species of Special Concern that is found in rocks, crevices, caves, mines, tunnels, tree holes, and buildings. It is most common in grassland, oak savannah, and open scrub habitats. Bats were observed during the spring 2004 red-legged frog night surveys, but the species of bat was unknown. Hence, the presence of this species at or near the project site is unknown.

San Diego Desert Woodrat *(Neotoma lepida intermedia).* The San Diego desert woodrat is a State Species of Special Concern. It occurs from San Diego to San Luis Obispo Counties, and is found in coastal sage scrub and chaparral habitats in rock outcrops, boulders, cactus patches, and dense undergrowth. The CNDDB identifies the nearest location of the San Diego desert woodrat as occurring 3.2 miles east of the project site, near Canada de Molino, Canada del Guillermo, Canada Hondo, and the mouth of Arroyo Hondo Creek. Coastal sage scrub is present in small patches in the floodplain. However, the extent of habitat is very small. Thus, this species is not expected to occur at the project site.

3.2.2 Potential Impacts – No Action Alternative

Under the No Action Alternative, the current bridge would remain in place and would be maintained as necessary by the County. Winter stream flows would overtop the bridge several times during a normal winter, depositing sediment on the bridge and road and flooding the Park entrance. Depending on the severity and duration of the flooding, the County may need to wait several days before removing sediment. In an emergency, when the Park and Hollister Ranch require immediate access, the County could take emergency actions to provide safe vehicular passage over the creek.

Once the flooding has ended, the County would determine if the creek upstream and downstream of the bridge would require desilting to improve conveyance for the next storm. Work in the creek would require permits, either routine or emergency, from the CDFG, the CCC, the USACE, and the RWQCB. In addition, the desilting work could affect several endangered species that reside near the bridge: the southern steelhead, the tidewater goby, and the California red-legged frog. Hence, the County would need to consult with these agencies prior to conducting any work to comply with the federal Endangered Species Act (ESA).

The continued use of the current bridge crossing would cause periodic adverse impacts to riparian habitat and endangered species. The current bridge traps sediment upstream of the crossing because the opening below the bridge has been plugged. The large amount of sediment upstream would eventually be conveyed by flood flows to downstream areas, which could cause a loss of habitat due to sediment deposition. In addition, the current bridge condition results in deep scouring immediately downstream of the bridge, which removes wetland and riparian habitat during large runoff events. Finally, it is likely that the current bridge would need to be repaired after a future storm, which would result in localized habitat disturbance. The repairs might have to occur under emergency conditions, when environmental protection measures could be relaxed to address the emergency.

For these reasons, the biological impacts of the No Action Alternative would be greater than under the proposed action. In addition, none of the biological benefits of the proposed action would be realized, such as more natural sediment transport conditions, removal of an instream fish passage barrier, and restoration of a wider meandering stream channel.

3.2.3 Potential Impacts – Proposed Action

3.2.3.1 Temporary Riparian and Wetland Habitat Impacts

Construction of the proposed action would cause temporary impacts to various native riparian and wetland habitats due to the need for construction access to work areas. The largest temporary disturbance would be the installation and removal of the temporary detour road. The channel desilting would also be considered a temporary disturbance, as the channel would be allowed to revegetate naturally after the completion of construction and the re-establishment of flows through the affected area.

A summary of the temporary and permanent disturbances to riparian habitats, upland habitats, ornamental trees, weedy areas, and developed areas is provided in Tables 6, 7, and 8.

Table 6
Estimated Temporary and Permanent Habitat Impacts of the Proposed Road and Bridge

Habitat Type	Permanent Loss from Road (acres)	Impact from Rock Rip-Rap (To Be Planted with Willows) (acres)	Areas of Temporary Construction Disturbance to Be Restored (acres)	Total (acres)
Riparian Habitats				
Emergent Wetlands	0.007	0.000	0.043	
Riparian Woodland	0.018	0.334	0.597	
Willow Scrub/Mule fat Scrub/Emergent Wetlands	0.000	0.000	0.000	
Willow Woodland	0.016	0.061	0.068	
Mule fat Scrub/Willow	0.021	0.000	0.000	
Mule fat Scrub/Willow Scrub	0.030	0.000	0.009	
Mule fat Scrub/Willow Woodland	0.004	0.009	0.000	
Elderberry	0.001	0.003	0.000	
Subtotal=	*0.097*	*0.406*	*0.717*	*1.220*
Upland Habitats				
Oak Woodland	0.000	0.002	0.000	
Coastal Sage Scrub	0.047	0.003	0.003	
Coyote Brush Scrub	0.013	0.039	0.059	
Coyote Brush Scrub/Coastal Sage Scrub/Elderberry	0.000	0.000	0.001	
Coyote Brush Scrub/Elderberry/Ruderal	0.054	0.000	0.000	
Coyote Brush Scrub/Mule fat Scrub	0.000	0.000	0.009	
Coyote Brush Scrub/Willow/Elderberry	0.022	0.029	0.000	
Subtotal=	*0.136*	*0.073*	*0.071*	*0.281*
Ornamental Trees				
Pepper Tree	0.012	0.028	0.000	
Eucalyptus Woodland	0.084	0.089	0.014	
Subtotal=	*0.096*	*0.117*	*0.014*	*0.227*
Ruderal/Weedy Areas				
Ruderal/Coastal Sage Scrub	0.000	0.000	0.013	
Ruderal/Non-native Grassland	0.013	0.002	0.001	
Ruderal/Non-native Grassland/Mule fat Scrub	0.003	0.000	0.006	
Ruderal/Coyote Brush Scrub	0.000	0.002	0.000	
Ruderal/Non-native Grassland	0.029	0.025	0.000	
Iceplant/Coyote Brush Scrub	0.070	0.055	0.005	
Iceplant/Mugwort	0.016	0.022	0.000	

Table 6
Estimated Temporary and Permanent Habitat Impacts of the Proposed Road and Bridge

Habitat Type	Permanent Loss from Road (acres)	Impact from Rock Rip-Rap (To Be Planted with Willows) (acres)	Areas of Temporary Construction Disturbance to Be Restored (acres)	Total (acres)
Iceplant/Mule fat Scrub/Ruderal	0.006	0.010	0.000	
Iceplant/Ruderal/Non-native Grassland	0.017	0.010	0.000	
Subtotal=	*0.153*	*0.126*	*0.025*	*0.303*
Developed or Paved	0.437	0.022	0.000	0.459
Grand Total=	**0.918**	**0.745**	**0.827**	**2.491**

Table 7
Estimated Temporary Habitat Impacts of the Temporary Detour Road

Habitat Type	Temporary Impacts (acres)		
	Shoulders	Road	Total
Riparian Habitats			
Emergent Wetland/Willow Scrub	0.03	0.03	0.06
Willow Scrub/Mule fat Scrub/Emergent Wetland	0.01	0.01	0.02
Willow Woodland	0.09	0.14	0.23
Willow Woodland/Emergent Wetland	0.09	0.05	0.14
Willow Woodland/Mule fat Scrub	0.01	0.01	0.02
Subtotal=			*0.47*
Upland Habitats			
Coyote Brush Scrub	0.04	0.05	0.09
Coyote Brush Scrub/Coastal Sage Scrub/Elderberry/Ruderal	0.01	0.01	0.02
Coyote Brush Scrub/Mule fat Scrub	0.01	0.03	0.04
Coyote Brush Scrub/Willow/Elderberry	0.03	0.04	0.07
Subtotal=			*0.22*
Ornamental Trees			
Eucalyptus Woodland	0.03	0.05	0.08
Pepper Tree	0.02	0.04	0.06
Palm	0	0.01	0.01
Subtotal=			*0.15*
Ruderal/Weedy Areas			
Ruderal/Non-native Grassland/Mule fat Scrub	0.02	0.02	0.04
Ruderal/Coyote Brush Scrub	0.02	0.06	0.08
Ruderal/Non-native Grassland	0.03	0.02	0.05
Ruderal/Coyote Brush Scrub/Mule fat Scrub	0.01	0.01	0.02

Table 7
Estimated Temporary Habitat Impacts of the Temporary Detour Road

Habitat Type	Temporary Impacts (acres)		
	Shoulders	Road	Total
Iceplant/Coyote Brush Scrub	0.02	0.02	0.04
Iceplant/Myoporum	0.01	0.01	0.02
Subtotal=			*0.25*
Developed or Paved	0.14	0.21	0.35
Grand Total=	**0.62**	**0.82**	**1.44**

Table 8
Estimated Temporary Habitat Impacts of the Channel Desilting

Habitat Type	Temporary Impact Acreage
Wetland Habitats	
Emergent Wetlands	0.15
Emergent Wetlands/Mule fat Scrub	0.03
Emergent Wetlands/Willow Scrub	0.10
Subtotal=	*0.28*
Riparian Habitats	
Mule fat Scrub/Willow Scrub	0.04
Mule fat Scrub/Willow Scrub/Ruderal	0.01
Riparian Woodland	0.42
Willow Scrub/Mule fat Scrub/Emergent Wetlands	0.05
Willow Woodland	0.06
Willow Woodland/Emergent Wetlands	0.34
Subtotal=	*0.92*
Ornamental Trees	
Eucalyptus Woodland	0.01
Ruderal/Weedy Areas	
Ruderal	0.03
Ruderal/Coastal Sage Scrub	0.00
Ruderal/Non-native Grassland	0.02
Ruderal/Non-native Grassland/Mule fat Scrub	0.04
Subtotal=	*0.09*
Grand Total=	**1.30**

A summary of the permanent and temporary habitat impacts is provided in Table 9. A total of 2.39 acres of riparian or wetland habitat would be temporarily disturbed during construction, as follows:

- Roadway approach construction 0.717 acres
- Detour road 0.47 acres
- Channel desilting 1.20 acres
- Total 2.39 acres

Table 9
Summary of Temporary and Permanent Habitat Impacts (Acres)

Habitat Type	Permanent Habitat Loss	Habitat Loss Due to Placement of Rock Rip-Rap*	Temporary Habitat Impacts (Areas to be Restored After Construction)			
			Roadway Approach	Detour Road	Channel Desilting	Total Temporary
Riparian and Wetland Habitats	0.097	0.406	0.717	0.47	1.20	2.39
Upland Habitats	0.136	0.073	0.071	0.22	0	0.291
Ornamental Trees	0.096	0.117	0.014	0.15	0.01	0.174
Ruderal/Weedy Habitats	0.153	0.126	0.025	0.25	0.09	0.365

*To be planted with willow woodland. This impact is considered permanent, but some credit for the planting of willows in the rip-rap would be applied to the habitat mitigation.

Under Environmental Protection Measure B-2 (Section 2.2.4), temporarily disturbed areas would be restored to pre-project conditions or better, with a 5-year maintenance and monitoring program and specific performance criteria for plant growth and survival. The objective of the restoration effort would be to establish a diverse mixture of riparian scrub and woodland in the disturbance zone (using container plants) that would have a higher species diversity and lower weed cover than under current conditions, particularly in light of the weed colonization since the 2004 wildfire. The habitat restoration approach for the desilted channel areas would be to reduce weed colonization for 5 years after construction. The disturbed channel is expected to recover rapidly with native plants due to the proximity of stream flows. Installing container plants in the active channel would not be wise or practical.

Under the provisions of Environmental Protection Measure B-2 (Section 2.2.4), 1.19 acres of temporarily disturbed areas (0.717 plus 0.47 acres) would be actively revegetated. In addition, the County would restore or enhance other riparian habitat along Gaviota Creek to provide a 3:1 restoration ratio for temporary impacts (exclusive of the desilted channel). Hence, the total habitat restoration for temporary habitat impacts would be 3.57 acres, based on 3 times the area of temporary construction impact (1.19 acres). To meet this 3.57-acre requirement, 1.19 acres would be restored in the actual area of temporary disturbance, and an additional 2.38 acres would be restored in other suitable areas in the Park. The desilted channel (1.20 acres) would be managed to facilitate revegetation. The temporary habitat impacts to the desilted channel are not included because this area would be readily restored, as noted above.

NISTAC conducted a field investigation to identify potential habitat mitigation and restoration sites in the Park. Candidate sites were identified as shown on Figures 23a and 23b; all of these sites are highly disturbed and/or dominated by non-native plants. The selection of the final sites for mitigation and/or restoration would be conducted in consultation with State Parks and CDFG.

3.2.3.2 Permanent Riparian and Wetland Habitat Impacts

Construction of the proposed action would cause the permanent loss of various native habitats due to the widening of the roadway approach and the construction of the bridge and associated bank protection on the west side of the creek. The greatest habitat loss would be associated with the new roadway embankment. Most of the habitats affected would be uplands, ornamental trees, and weedy areas. Riparian and wetland habitats would constitute only 10 percent of the overall habitat loss, as shown in Table 9. The total permanent loss of riparian and wetland habitats would be 0.503 acres, which would consist of losses due to the roadway approach and the rock slope protection on the west side (0.097 plus 0.406 acres).

The loss of 0.503 acres of riparian and wetland habitat could feasibly be replaced by riparian and wetland restoration and enhancement projects in the Park under the provisions of Environmental Protection Measure B-16 (Section 2.2.4). The total restoration acreage would be based on the habitat mitigation ratio (5:1). By implementing this habitat replacement mitigation, the permanent habitat loss would be fully offset by restoring about 2.5 acres of riparian and wetland habitat at the Park. The County would restore 2.5 acres in the first winter after construction. The objective of the restoration effort would be to establish a riparian woodland (using container plants) that would have a higher species diversity and lower weed cover than under current conditions, particularly in light of the weed colonization since the 2004 wildfire. The restoration includes a 5-year maintenance and monitoring program and specific performance criteria for plant growth and survival. Candidate restoration sites are shown on Figures 23a and 23b; these sites are all highly disturbed and/or dominated by non-native plants. The selection of the final sites for restoration would be conducted in consultation with State Parks and CDFG.

Approximately 0.406 acres of riparian habitat along the north side of the roadway embankment would be displaced with ungrouted rock rip-rap. This impact would be partially offset by planting willows in the rock, per Environmental Protection Measure B-3, which includes a 5-year maintenance and monitoring program and minimum performance criteria. The County would consult with CDFG to determine the amount of credit from the willow plantings that can be applied to the total mitigation requirement of 2.5 acres.

About 0.136 acres of upland habitat, consisting mostly of the common coyote brush scrub, would be permanently removed due to new roadway (see Table 9). Approximately 0.096 acres of ornamental trees, mostly eucalyptus, would also be removed for the new roadway.

3.2.3.3 Direct Impact on Aquatic Habitats

Aquatic habitats in Gaviota Creek would be directly disturbed by the channel desilting activities, the installation and removal of the temporary creek crossing, and the construction of the bridge. A 600-foot-long reach of the creek would be dewatered during the summers of 2006 and 2007 for construction. Fish and other aquatic species would be excluded from this reach until the 2006/2007 winter and at the end of construction. This impact would be temporary, as aquatic habitats would readily become established once flow is re-established in the creek. The following

Environmental Protection Measures (Section 2.2.4) would ensure that impacts to aquatic habitats and species at the project site are minor, temporary, and localized.

- Environmental Protection Measure B-1 would prohibit construction work within the bed and bank of Gaviota Creek or within 15 feet of the top of the bank during the period December 1 to July 1.
- The state-required SWPPP and Environmental Protection Measure B-4 would protect creek water quality and aquatic organisms from sedimentation or turbidity impacts during construction by the use of various BMPs.
- Environmental Protection Measure B-6 would require a biological monitor to remove fish and aquatic species from the creek prior to dewatering and channel desilting.
- Environmental Protection Measure B-7 would require a biologist to monitor the dewatered creek reach to ensure that no aquatic species recolonize the work area. In addition, the dewatering system shall be designed to prevent entrainment of aquatic organisms by using screens.
- Environmental Protection Measure B-8 requires that a pilot channel be excavated in the creek at the end of construction to facilitate the re-establishment of aquatic habitats in the work area.

3.2.3.4 Degradation of Water Quality from Erosion and Sedimentation

Construction work would expose soils to erosion and possible sedimentation of Gaviota Creek downstream of the work site, which could adversely affect aquatic habitat and species. All work in the creek would occur outside the rainy season to avoid direct exposure to rainfall and runoff. Hence, the primary erosion and sedimentation impact would occur from rainfall and runoff impinging on inactive work areas during the winter season. These areas would be stabilized by various erosion control BMPs in accordance with the state-required SWPPP for the project. BMPs would include such measures as erosion control mats, catchment basins, hay bales, and silt fences.

The state-required SWPPP would protect creek water quality from excessive sedimentation or turbidity impacts during construction. Hence, the amount of erosion and sedimentation is expected to be minimal.

Limited work (that would not involve grading) would be allowed outside the creek along the roadway approach during the winter. Special BMPs would be required under the SWPPP to ensure that no polluted runoff or sediments would be discharged to the creek.

Environmental Protection Measure B-4 (Section 2.2.4) would provide additional measures and BMPs to increase the effectiveness and coverage of erosion control in the state-required SWPPP.

3.2.3.5 Displacement of Wildlife During Construction

Construction noise, traffic, and human activity would displace wildlife from the construction work areas and possibly discourage use of adjacent habitat areas. Since the June 2004 wildfires, there is little wildlife activity (other than wild pigs) outside the road corridor. Construction work would be timed to avoid the primary nesting period for riparian breeding birds, which could

breed in the remaining riparian habitat along both sides of Gaviota Beach Road (see Environmental Protection Measure B-1). Construction work would be limited to the daylight hours and would only occur on weekdays. Hence, nocturnal wildlife would not be adversely affected by construction and could travel through or around the construction site during foraging events. The displacement of wildlife from the construction work site is unavoidable, but is considered only a minor to moderate impact based on the factors noted above.

3.2.3.6 Effect of Roadway Embankment on Wildlife Movement

The new roadway embankment would be about 12 feet higher and more than 50 feet wider than the current road corridor across the floodplain. The larger embankment is not expected to create a substantial barrier to wildlife movement across the road, which would involve highly mobile species such as raccoon, opossum, coyote, skunk, and fox, which can readily traverse the road embankment. The new roadway embankment would not create a substantial impediment to the movement of wildlife across the Gaviota Beach Road.

The proposed action includes three wildlife movement culverts to facilitate movement through the road corridor without having animals cross the road. These culverts would be over 70 feet long, 4 feet high, and 4 feet wide. The proposed wildlife movement culverts are designed for small mammals (i.e., skunk, opossum, raccoon, snakes, and wood rats), not for deer or bear because habitat for these large mammals is not present on the east side of the road. The culverts would be a beneficial element to the project because they would provide an alternate route for wildlife movement and would allow flood flows to pass through the culverts during substantial events.

3.2.3.7 Effect on Southern Steelhead

Construction activities in Gaviota Creek could adversely affect steelhead migrating upstream or downstream. However, this impact can be avoided with the following environmental protection measures. Construction work in the creek, including the dewatering and creek bypass operation, would occur outside the steelhead upstream and downstream migration period (Environmental Protection Measure B-1). Hence, no direct impact to steelhead is anticipated. A pilot channel would be excavated in the creek at the end of construction (see Environmental Protection Measure B-8) to facilitate favorable passage conditions for steelhead in the first winter after construction. The desilting of the creek and other disturbances to the creek bed at the bridge site are not expected to cause any long-term adverse effect on steelhead migration in the creek, as the creek would naturally establish a flow channel through the work area.

The long-term effect of the proposed action is to remove a substantial barrier to steelhead migration, which would represent a beneficial impact to this species.

3.2.3.8 Effect of Construction on Tidewater Gobies

The desilting of the channel downstream of the bridge site and the installation and removal of the temporary creek crossing would directly affect the tidewater goby. This impact would be minor with the application of Environmental Protection Measures B-6, B-7, B-8, B-10, and B-11. Direct mortality to this species would be avoided by implementing the fish relocation program and the dewatering/creek bypass measures (see Environmental Protection Measures B-6 and

B-7). In addition, a biological monitor would be present during the initial creek desilting and crossing construction to ensure that no fish are inadvertently left behind (Environmental Protection Measure B-10). Environmental Protection Measure B-7 contains specific procedures to ensure that gobies are evacuated from the dewatered creek work site in a careful manner. Environmental Protection Measure B-11 requires that the County educate workers on the occurrence and sensitivity of gobies and the need to protect them during construction.

The temporary displacement of about 250 feet of creek habitat during construction would represent a minor impact on this species, as abundant habitat is available downstream of the work area. Also, freshwater input from the upper watershed would continue to flow to the lower creek through the creek bypass system, providing a continual source of freshwater for the gobies.

Construction work would expose soils to erosion and possible sedimentation of Gaviota Creek downstream of the work site, where the gobies reside. The amount of erosion and sedimentation is expected to be minimal due to the implementation of standard BMPs in accordance with the state-required SWPPP for construction projects. Additional water quality protection is provided in Mitigation Measure B-4 (Section 2.2.4). The enhanced SWPPP would protect the gobies from substantial sedimentation or turbidity impacts during construction.

The short-term construction-related impacts to this species would likely be minor. The County successfully implemented the same types of environmental protection measures for the previous bridge repair project, and State Parks successfully implemented similar measures for several recent projects affecting the goby.

3.2.3.9 Effect of Construction on Red-legged Frogs

The desilting of the channel both upstream and downstream of the bridge site, the installation and removal of the temporary creek crossing, the placement of rock rip-rap upstream and downstream of the bridge, and the construction of the bridge would directly affect the red-legged frog. However, impacts to this species would be minor. Environmental Protection Measures B-6, B-7, B-9, B-10, and B-11 (Section 2.2.4) would ensure that substantial adverse impacts are avoided.

Direct mortality to this species would be avoided by implementing the frog relocation program and the dewatering/creek bypass measures (see Environmental Protection Measures B-6 and B-7). A biological monitor would be present during the initial creek desilting and crossing construction to ensure that no frogs were inadvertently left behind. Environmental Protection Measure B-7 contains specific procedures to ensure that frogs are evacuated from the dewatered creek work site in a careful manner.

An exclusion fence would be placed around the work areas to prevent red-legged frogs from entering the construction zone (Environmental Protection Measure B-9). Under Environmental Protection Measure B-10, a biologist would monitor most construction work activities to ensure that red-legged frogs do not inadvertently re-enter the work areas. Environmental Protection Measure B-11 requires that the County educate workers on the occurrence of frogs and the need to protect them during construction.

The temporary displacement of about 600 feet of creek habitat during construction would represent a minor impact on this species, as abundant habitat is available in the watershed upstream of the work area. The short-term construction-related impacts to this species would

likely be minor. The County successfully implemented the same types of environmental protection measures for the previous bridge repair project, and State Parks successfully implemented similar measures for several recent projects affecting the frog.

3.2.3.10 Effect of Project on Other Special-Status Species

The proposed action could adversely affect the following special-status species that may occur in the creek work area or in the riparian habitat affected by the temporary detour road and the permanent roadway approach: the monarch butterfly, the arroyo chub, the two-striped garter snake, and the western pond turtle. Any impacts to these species would be minor for the reasons described below.

- **Monarch butterfly.** The small eucalyptus grove along the road corridor does not represent a recognized roost, and this grove does not support a large or persistent population of monarch butterflies. A larger and more suitable grove is present in the southwest corner of the Park.
- **Arroyo chub, two-striped garter snake, and western pond turtle.** The environmental protection measures to protect the goby and the red-legged frog would be applied to these species and would minimize impacts. These species would be removed from the work site if observed during pre-construction surveys. On completion of the project, the habitat along the creek would be returned to its pre-construction conditions and support these species again.

The other special-status species discussed in Sections 3.2.1.4 and 3.2.1.5 are not expected to occur in the project area and thus would not be affected by the proposed action.

3.2.3.11 Effect on Floodplain Biological Functions

As described in Section 3.1.3, the proposed action would modify the floodplain limits in the lower watershed. The change in flow patterns would reduce the 10- and 100-year floodplain limits as shown on Figure 18. There would be a slight increase in the 10-year floodplain upstream of the bridge. However, a larger portion of both the 10- and the 100-year floodplains (about 3.93 acres) would be reduced east and downstream of the bridge. The total net change in floodplain boundaries would be a 3.24-acre reduction.

The area where the floodplain would be reduced is shown on Figure 18. This area contains a mixture of native riparian plants, ornamental trees from a historical ranch that occupied the floodplain area, and non-native weeds. This area was burned during the June 2004 wildfire, which killed willows and coyote brush shrubs in the area. At this time (June 2005), this area is dominated by the noxious weeds that have invaded the floodplain, including castor bean, thistle, black mustard, white sweet clover, hemlock, and German ivy. In addition, wild pigs have caused substantial ground disturbance as they dig in the ground for roots.

Section 3.1.3.5 includes a description of typical floodplain functions, which include the following:

- Function 1. Reduce Flooding
- Function 2. Maintain Groundwater
- Function 3. Contribute to Sediment Dynamics
- Function 4. Improve Surface Water Quality

- Function 5. Support Riparian, Wetland, and Aquatic Habitats
- Function 6. Provide Recreation Opportunities
- Function 7. Provide for Agriculture
- Function 8. Provide for Urban and Industrial Development
- Function 9. Provide for Infrastructure
- Function 10. Provide Mineral Resources

Function 5 is related to biological resources. Floodplains provide substrate and hydrologic conditions for floodplain riparian habitats, which typically contain a variety of biomass, vegetative structure, and persistence, which in turn, support high wildlife diversity. Floodplains also provide cover near active creek channels for wildlife movement and habitat connectivity. Floodplains may contribute to base flows to creeks that prolong aquatic habitats and growth periods for wetlands. Finally, floodplains may support special-interest species.

The affected floodplain area (Figure 18) contains a wide range of ornamentals, upland vegetation, weeds, and riparian vegetation. It is highly disturbed by flooding and historical ranch development. Also, many of the floodplain habitats were removed, possibly permanently, by the 2004 wildfire. Large riparian trees are sparse. Feral pigs are substantially disturbing the habitats in the affected floodplain, facilitated by the removal of woody plant cover by the wildfire.

The removal of this area from the floodplain would remove the periodic flooding disturbance to these habitats. This change could result in the conversion of the existing mixture of upland and riparian habitats to a predominance of upland types. However, this impact is considered moderate, as the new habitats, whether they are upland or riparian or a mixture, would likely be more productive for wildlife than the existing highly disturbed ones. The affected floodplain area with the proposed action is expected to have sufficient soil moisture from rainfall and high groundwater to support riparian trees, such as willows, sycamores, and cottonwoods. This area could be restored to higher habitat values with a mixture of riparian and oak woodlands, with dense native plant understories. Small vernal depressions could be created that would support seasonal wetlands, supported by runoff from Highway 101 and rainfall. Creation of a multi-layer woodland area with scattered depressional wetlands, devoid of weeds and feral pigs, would improve wildlife habitat conditions in the affected floodplain area, even with the change in hydrologic regime. This type of restoration could be accomplished in Site D (Figure 23a) under the habitat restoration requirements in Environmental Protection Measure B-16. Hence, the biological impact of reducing the floodplain would be minor.

The contribution of the affected floodplain area to base flows in the creek is likely to be negligible due to it small size and the low storage potential of the floodplain area.

3.2.3.12 Consistency with the Endangered Species Act

Section 7 of the federal ESA requires that federal agencies consult with the USFWS or NOAA Fisheries when a federal agency determines that a proposed action may affect a species (or its designated critical habitat) that either agency lists as being threatened or endangered. Since 2002, FEMA has conducted informal consultations with these two agencies concerning the effects of

the project on the southern steelhead, the tidewater goby, and the red-legged frog and proposed critical habitat for the red-legged frog.

In January 2005, FEMA submitted a Biological Assessment to USFWS and NOAA Fisheries to initiate the formal Section 7 consultation for the proposed action (see Appendix B). The Biological Assessment concluded that the proposed action is not likely to adversely affect the southern steelhead, primarily because work in the creek would occur outside its migration period and because no rearing habitat is present at the project site. The Biological Assessment also concluded that only minor, if any, impacts would occur to the tidewater goby and the red-legged frog with the application of the environmental protection measures (Section 2.2.4)

In June 2005, USFWS issued a Biological Opinion (excerpts are provided in Appendix B) for the proposed action that concluded that the proposed action would not jeopardize the continued existence of the tidewater goby or the red-legged frog and that the proposed action would not adversely modify proposed critical habitat for the red-legged frog. The Biological Opinion considered incidental take of both species related to unavoidable impacts during construction. The Biological Opinion also included three reasonable and prudent conditions to minimize take:

> (1) Only Service-approved personnel shall survey for, capture, handle, and relocate tidewater gobies and California red-legged frogs from the action area, and only in an appropriate manner for the minimum time necessary: (2) Contaminants must not be introduced into the project area floodplain, or onto nearby soils; and (3) Measures to minimize adverse impacts to California red-legged frogs and tidewater gobies must be employed during project implementation.

The County would be responsible for adhering to all terms and conditions and implementing the reasonable and prudent measures listed in the Biological Opinion.

In July 2005, NOAA Fisheries issued a letter to FEMA concurring with the determination in the Biological Assessment that the proposed action, with the environmental protection measures, would not be likely to adversely affect southern steelhead (Appendix B).

3.2.3.13 Consistency with Wetland Executive Order

Executive Order 11990 (Protection of Wetlands) states that:

> Each agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.

Federal agencies are required to avoid undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative. FEMA's regulations for complying with Executive Order 11990 are found at 44 CFR Part 9.

In compliance with Executive Order 11990, FEMA considered the proposed action's impacts to wetlands. FEMA applies the Eight-Step Decision-Making Process to ensure that it funds projects consistent with Executive Order 11990. The NEPA compliance process involves essentially the same basic decision-making process to meet its objectives as the Eight-Step Decision-Making Process. Therefore, the Eight-Step Decision-Making Process has been applied through implementation of the NEPA process. FEMA published an Initial Public Notice at the

declaration of the disaster. FEMA will ensure publication of a Final Public Notice before implementation of the proposed action to comply with Executive Order 11990.

The functional nature of the project requires that it affect wetlands. The County would be required to apply for and obtain a Department of Army Permit from the USACE in compliance with Section 404 of the Clean Water Act and implement all mitigation measures described in the permit. The County would minimize the disturbance to wetlands to only those portions of the channel necessary to complete the project. With implementation of these measures, the proposed action would comply with Executive Order 11988.

3.2.4 Potential Impacts – Alternative Alignments

The Easterly and Westerly Alternatives could have a slightly greater impact on water quality and the associated aquatic species because more undeveloped floodplain would be cleared and graded compared to the proposed action and more fill would be imported to construct the roadway embankment. Work in the creek to construct the bridge would be similar to the proposed action.

The permanent habitat impacts of the alternative alignments would be greater than the proposed project because a new roadway would be constructed in the undeveloped floodplain on either side of the existing roadway. It is estimated that about 1.3 acres of riparian habitat would be permanently removed by the alternative alignments compared to 0.5 acres for the proposed action. In contrast, these alternatives would not require construction of the temporary detour road, which would affect about 0.47 acres of riparian habitat.

Direct impacts to the southern steelhead, the tidewater goby, and the red-legged frog due to construction of the bridge would be similar to the direct impacts under the proposed action because these species would be protected by the same avoidance measures used in the proposed action. However, these alternatives would have a greater impact on the habitats for the tidewater goby and the red-legged frog because the new bridge sites would be located in undisturbed areas, where these species are potentially abundant.

3.2.5 Potential Impacts – Causeway Alternative

This alternative may have similar construction-related impacts on water quality and associated aquatic species as the proposed action. The causeway would not require earthwork to construct a new road embankment, so this alternative would have less potential for erosion. However, the amount of temporary disturbance along the causeway would be greater during pier installation, as access would be required on both sides of the causeway. Also, much of the corridor would need to be cleared to install the piers. The amount of work in the existing creek to install the piers would be similar to that of the proposed action.

The installation of the piers would cause temporary impacts to riparian habitat because it would require clearing and grubbing of portions of the causeway corridor to install the piers and because temporary access would be required on each side of the corridor. Also, this alternative would temporarily disturb riparian habitat along a detour road, similar to the proposed action. However, this alternative would not require channel desilting. The estimated temporary habitat impacts of this alternative would be about 1.25 acres, compared to 2.39 acres associated with the proposed action.

The permanent habitat impacts of this alternative would be less than the impacts associated with the proposed action because a roadway embankment would not be constructed. The piers would occupy less than 1,000 square feet of habitat. The causeway would affect 0.75 acres of riparian habitat due to shading; however, the shading would not preclude the development of low-growing riparian habitat and wetlands. As such, this effect is not considered a permanent loss of habitat. The proposed action would result in the loss of 0.5 acre of riparian and wetland habitat from the larger roadway embankment.

Direct impacts to the southern steelhead, the tidewater goby, and the red-legged frog, due to construction of the causeway at the location of the active stream channel would be similar to the direct impacts under the proposed action because these species would be protected by the same avoidance measures used in the proposed action.

This alternative would have less impact on wildlife movement because it would remove the existing bridge and roadway from the floodplain, thereby increasing opportunities for wildlife movement throughout the lower floodplain.

3.2.6 Potential Impacts – Alternative Bridge Site

This alternative could have greater construction-related impacts on water quality and associated aquatic species than the proposed action because of the substantially greater area that would be graded. It is estimated that about 5 acres would be cleared, grubbed, and graded along the new road in the Park under this alternative compared to about 3 acres under the proposed action. This area would be exposed to erosion during construction. Construction of the new road would also likely involve greater earthwork and more stabilization of cut-and-fill slopes than with the proposed action. The amount of work in the creek would be less than in the proposed action because the crossing would be smaller. However, the existing bridge and roadway would be removed under this alternative, requiring work in the creek and floodplain that could cause construction-related erosion.

The overall temporary impacts from the construction of a new road would be similar to those of the proposed action. It is estimated that 2 acres of upland habitat and 0.3 acre of riparian habitat would be temporarily disturbed. The proposed action would have a similar total impact, but would affect more riparian than upland habitat (2.39 acres of riparian habitat and 0.291 acres of upland habitat).

This alternative would result in the loss of about 5 acres of upland habitat (coastal sage scrub and annual grassland) and 0.10 acre of riparian habitat. The proposed action would result in the permanent loss of 0.5 acre of riparian habitat and 0.136 acre of upland habitat. Hence, this alternative would have a greater overall impact on native habitats.

This alternative would have direct impacts to the southern steelhead, the tidewater goby, and the red-legged frog due to the removal of the existing bridge and roadway embankment. It would also directly affect southern steelhead and red-legged frogs because of the construction of the new bridge. These impacts would be similar to those under the proposed action because these species would be protected by the same avoidance measures used in the proposed action.

This alternative would have less impact on wildlife movement because it would remove the existing bridge and roadway from the floodplain, thereby increasing opportunities for wildlife movement throughout the lower floodplain.

This alternative would have greater temporary impacts on wildlife due to construction disturbance compared to the proposed action because it would affect a larger area and require more time to complete.

3.3 RECREATION

3.3.1 Existing Conditions

The proposed action is located within the boundaries of the Park (Figure 24). The Park is an important local and statewide recreational resource because it is situated along Highway 101 between San Francisco and Los Angeles with immediate access to the coastline. Most of the coastline from Goleta to Santa Maria is not accessible because it is located in large private landholdings (i.e., the Hollister and Bixby Ranches) or Vandenberg Air Force Base. The Park provides convenient beach access to Santa Barbara County residents for this portion of the coastline. The Gaviota Pier offers the sole fishing pier with boat hoist between Avila Beach and Goleta Beach. The Park also provides several special amenities that are not available at other public beaches north of Gaviota: rugged and picturesque mountain backdrop, extensive vistas of the coast and ocean from the pier, world-class surfing, and generally milder weather conditions.

The Park contains the following recreational facilities, which are shown on Figure 25:

- 41 developed campsites with full hook-ups for recreational vehicles (RVs) and trailers (up to 25 feet long); campsites include fire pits, picnic tables, and electricity supply. Drinking water is available from on-site wells. A restroom with showers is available to campers. A sewage station is not available for RVs and trailers.
- A day use parking area with a capacity for 104 vehicles and 12 car-boat trailer combinations. The day use area contains restrooms with showers and a mini-store. The day uses include fishing or boat launching from the pier, beach play, and surfing.
- A pier with a 2-ton boat hoist, primarily for recreational fishing.
- 10 miles of designated hiking trails. One of the most popular is the strenuous 6-mile trip to the top of Gaviota Peak, a 2,458-foot mountain that provides a dramatic view of Point Conception, the Channel Islands, Gaviota Pass, and Lompoc Valley. The trailhead to the main trail (Road 28) is located on the bluffs west of the Park entrance on Hollister Ranch Road.
- Horseback riding on certain trails in the Park.
- Mountain bike riding on certain trails in the Park.
- An overflow parking lot is available for horse trailers or campers with two vehicles

The Park is open for day use year-round from 7 AM until sunset. A camp host is present at the Park on a year-round basis. A ranger is present on-site or in the vicinity of the Park throughout the year. The kiosk at the Park entrance is manned during daytime hours during the peak summer months. During the winter period, October 1 to April 1, camping is only allowed on Friday, Saturday, and Sunday nights due to decreased demand and staffing limitations. In winter, the campground may be closed for several months or the entire winter season. For example, in the winter season of 2004–2005, the campground is closed until March 2005.

The campground is also closed in the winter if the campground is flooded or when it appears that there may be high flows in the creek that could overtop and flood the campground. For example, the campground was closed for several weeks in December 2002 and January 2003 due to flooding from the creek. Flooding in January 2005 caused substantial sediment deposition in the Park; the campground remains closed at this time (June 2005). Sediment-laden flows overtopped the existing bridge in the winter and traveled down the road into the campground.

Camping is most popular in the spring and summer months. The Park campground is typically full during major holidays in both the spring and the summer.

Day use is fairly consistent throughout the year due to surf conditions and fishing seasons. Visitor uses at the Park include active and passive recreational uses such as beach day use, camping, hiking, bicycle touring, horseback-riding, fishing from the pier and by boat, diving, birding, wildlife viewing, and wildflower walks. The highest and most concentrated uses over the course of a year occur in the pier and beach area, where surfers use the boat hoist or beach to access the world-renowned up-coast surfing. During the summer months, heavy use is also concentrated in the campground area. A summary of Park uses throughout the year is provided in Table 10.

Table 10
Summary of Park Uses During the Year

Recreation Activity by Location	Seasonality	Time of Day For Greatest Activity	Relative Sensitivity to Construction Activities at Bridge Site*
Surfing Beach	Year-round	Varies, mostly early morning	Low (except for park access)
Fishing/Diving Pier Ocean	Year-round	Early am	Low (except for park access)
Swimming Beach	Summer–Fall	Daylight hours	Low (except for park access)
Hiking, Riding & Other Day Use Trails Bluff top Back country	Year-round	Daylight hours	Low (except for park access)
Camping Campground	Year-round, highest in summer	Daylight hours	High

* Based on proximity, viewing opportunities, etc.

The majority of overnight visitors at the Park are local, typically from Buellton, Lompoc, Santa Ynez, or other northern Santa Barbara or southern San Luis Obispo County locations. At times strong onshore-offshore breezes through Gaviota Pass result in high wind conditions in the campground, which deters many campers, especially tent campers. State Parks staff estimate that 75 percent of overnight visitors during the summer season are from the local area, increasing to 90 percent in the off-season months. According to State Parks staff, visitors may purchase a campsite as much as a week early during the summer to ensure weekend accommodation. The Park also receives some overflow visitors who are unable to find accommodation at the

campgrounds closer to Santa Barbara, such as El Capitan, Refugio, or Carpinteria State Beaches, as well as bicycle tourists traveling the West Coast.

The Park is not on the state's reservation system, and camping is on a first-come, first-served basis. Thus, overnight visitors will usually arrive in advance of a holiday weekend by one or more days. For example, if a holiday occurs on a Monday, visitors would be expected to begin arriving Thursday evening or Friday morning of the prior week.

Visitation over a period of years has varied widely at the Park, as at other parks, depending on weather conditions, construction or facility-related issues, and to some extent, fee rates. The Gaviota State Park General Plan notes visitation from July 1975 through June 1976 was 170,768. During the same time period two decades later in 1995–1996, visitation was slightly down, but comparable at 155,463. However, in 1986–1987, visitation was over 300,000.

3.3.2 Potential Impacts – No Action Alternative

Under this alternative, the Park would continue to be subject to periodic closures during flood events and possibly closure for an extended period of time if sediments are deposited throughout the campground and day use area, such as in 2005.

3.3.3 Potential Impacts – Proposed Action

3.3.3.1 Long-term Impact of the Bridge and Roadway

Annual flooding in Gaviota Creek virtually guarantees at least one period of closure per year. A review of visitation over the past 10 years indicates major disruptions to visitors at the Park that resulted in either complete or partial closure of the Park: the Park's campground rehabilitation, bridge replacement (1997), bridge repair (1998), El Nino storm damage (1995, 1998), cleanup of minor flood damage to campground (2000, 2001, and 2002), and periodic extended outages of the boat hoist. Substantial sediment deposition occurred during the January 2005 flooding of the Park. Visitors are generally aware that the Park experiences regular closure due to flooding and in the past decade have apparently become accustomed to construction projects and service interruptions.

The construction of the bridge and roadway would provide safe and reliable access to the Park on a year-round basis, avoiding Park closures due to bridge failure or flooding. The project would not fully reduce the frequency of overbank flooding of the Park downstream of the bridge, as described in Section 3.1.3. The flooding is a natural event due to the low elevation of the Park and cannot be fully avoided or mitigated with flood control facilities.

The proposed bridge would provide several recreational amenities to the Park. It would provide a Class II bike lane on the road and bridge, enhancing bicycle access to and from the Park and ultimately providing access to the future Coast Trail along Highway 101. Also, the road and bridge would be widened to County rural road standards, thereby allowing the safe passage of RVs and trucks in opposite directions. This widening would enhance traffic safety at the Park.

The bridge project would not result in the loss of any campsites. The two affected campsites would be relocated within the campground and would be replaced with two new campsites. There would be no reduction in the number of parking spaces at the overflow parking lot.

3.3.3.2 Effect of the Bridge on the Visitor Experience

The Park is utilized by a variety of users. As noted above, most visitors are from Santa Barbara County and are expected to have a familiarity with Park facilities. Many are repeat users (e.g., fishermen, boaters, and surfers) that know the Park well. Other users would be first-time destination visitors from outside the County or casual visitors traveling along the coast. A visitor's experience is depends on many factors, including familiarity with the Park; the focus of the visit and the location of activities; expectations about the quality of Park facilities, the setting, and services; satisfaction with the facilities and services; and weather conditions.

The proposed bridge and improved roadway approach would represent a substantial change to return visitors for several reasons. First, these visitors would immediately recognize that the completed bridge is a final solution for the chronic flooding problem at the site, and most would probably welcome this change. Second, the bridge is long (257 feet) and represents a conventional public works facility constructed of concrete that may appear out of place to some visitors. Third, the elevated roadway would be wider and have rock rip-rap on the north side and guard rails on both sides of the road. The wider road would present a more expansive entry to the Park with a greater amount of asphalt. The existing narrow, tree-shrouded corridor is pastoral in nature; the replacement would have a more open setting with views to the beach and mountains (at least until roadside landscaping created a new line of trees). Some visitors may lament the initial loss of the roadside greenery, though it would be replaced over time with landscaping. Other return visitors may welcome the new views and more dramatic entry to the Park afforded by a higher and wider roadway.

The new bridge and roadway would not be visible to visitors once they are in the day use area, at the beach, or on the pier, as described in more detail in Section 3.6.3, below. Views of the bridge would be severely limited from the campground after the proposed landscaping is mature. The bridge and roadway would not block any views of the Santa Ynez Mountains. Hence, the bridge would not detract from the visual experience of Park users once they are in the Park.

The bridge and roadway would be visible to hikers on Road 28 as they pass by the bridge on their way to the upper watershed. This brief (a few minutes) view of the road and bridge would be expected to cause a neutral or slightly negative reaction among hikers that are familiar with the trail. However, the hikers' focus is expected to be on reaching the undeveloped portions of the Park for views and solitude, and for this reason the improved bridge may not even be noticeable to some the hikers. At distances of 500 feet or more from the bridge site, the roadway and bridge would be screened by riparian vegetation in the floodplain and planted along the roadway embankment, effectively screening the roadway, as it is under current conditions.

New visitors to the Park would not likely view the new bridge and road as a foreign or disruptive element to the Park. The proposed bridge and elevated roadway would follow the existing corridor and thus would not create a new disturbance through the floodplain. Both sides of the roadway would be revegetated with riparian plants to provide a natural setting and to screen the rock rip-rap on the north side. The bridge, though conventional in design, would not be out of place along a two-lane rural road, particularly with the proposed barrier rail treatment to simulate a wooden bridge, and would be visually compatible with the Park entrance, which contains a kiosk, signs, fencing, power lines, and extensive pavement.

Based on these considerations, the proposed bridge and approach roadway are not expected to substantially detract from the visitor's experience. Although the size of the bridge and roadway

would be larger than under current conditions, the bridge and roadway are expected to blend into the floodplain over time due to the proposed landscaping and would not create a visual distraction. The primary determinants of the visitor experience at the Park are unrelated to the bridge (e.g., the condition of the facilities, the weather, ocean conditions, etc.). However, some Park users, such as long-time users that enjoy the rustic and often-unpredictable condition of the Park and the surrounding natural setting, may not welcome a more conventional and larger bridge and roadway.

The overall impact of the proposed bridge and approach roadway is not expected to substantially detract from the visitor's experience. However, a visitor's experience and reaction to the new bridge and roadway are very subjective. This impact would be reduced by Environmental Protection Measure R-4, which requires BAR approval of the final bridge coloring and barrier rail design, the proposed guard rail coloring, and the roadside landscaping plan. Also, the County would offer State Parks the opportunity to provide input on the bridge aesthetic design and roadway landscaping plans to address concerns about the effect of the project on the visitor experience.

3.3.3.3 Effect of Construction on Visitors

Construction of the project would require about 18 months to complete, extending from July 2006 to December 2007 (preliminary dates). For most of the 2006–2007 winter, construction work would be greatly reduced. Construction activity would occur from 7 AM to 4 PM on Monday through Friday. As described in Section 2.2.4, the County would prohibit construction work on the following holidays, and on the afternoons preceding these holidays, to reduce conflicts with visitors to the Park: Memorial Day, Independence Day, and Labor Day. In addition, construction would be prohibited on the following state holidays if they occur on Friday or Monday: Martin Luther King Jr. Day, Presidents' Day, Cesar Chavez Day, Columbus Day, and Veterans Day. This restriction has been incorporated into Environmental Protection Measure R-1.

The construction contractor would not be allowed to park vehicles in the campsite or day use areas of the Park.

As described in Section 2.2.2.1, construction would be completed in five stages. A summary of the construction activities is presented in Table 11 as well as the primary effects of these activities on the visitor experience.

Table 11
Summary of Construction Staging

Stage	Duration (weeks)	Major Construction Activities	Major Impact on Visitor Experience
1	4	▪ Desilt the creek downstream of the bridge ▪ Construct temporary detour road and crossing ▪ Construct temporary Park entrance and kiosk ▪ Install sign directing traffic to two routes across the floodplain ▪ Relocate the generator	Change in Park access Construction noise and traffic along temporary detour road Construction noise and activity at Park entrance

Table 11
Summary of Construction Staging

Stage	Duration (weeks)	Major Construction Activities	Major Impact on Visitor Experience
2	1	▪ Remove existing kiosk ▪ Construct last section of detour to Hollister Ranch	Construction noise and activity at Park entrance
3	17	▪ Demolish bridge and desilt creek upstream of bridge ▪ Construct bridge piers and abutments; construct deck ▪ Construct roadway approach, including embankment, rock slope, wildlife culverts, and pavement ▪ Install rock slope protection upstream of bridge	Construction noise and traffic along road and at bridge site
4	10	▪ Complete bridge construction (if necessary) ▪ Remove detour to Hollister Ranch; route Ranch traffic to new roadway and bridge ▪ Construct new Park entrance and kiosk	Construction noise and traffic along road and at bridge site Construction noise and activity at Park entrance
5	13	▪ Route all traffic to new roadway and bridge ▪ Remove temporary detour road and crossing ▪ Regrade creek channel downstream of bridge ▪ Construct rock slope protection downstream of bridge ▪ Construct new campsites and repair parking lot ▪ Initiate post-construction habitat restoration efforts (mitigation)	Construction noise and traffic along temporary detour road

Interference with Access Due to Detour and Relocated Kiosk

Visitors would have to follow detour signs to the temporary road throughout most of the construction period. Also, they would need to follow new road striping, signs, and traffic cones when the temporary Park entrance is established in Stage 1. Visitors would easily comply with these changes in circulation because they would be minor and because motorists are used to encountering detours. There may be a slight inconvenience and questions about the detour, but the impact of following a detour before entering the Park is not expected to substantially detract from the visitor's primary purpose and experience at the Park.

Establishment and Presence of Staging Areas with Equipment

Several staging areas would need to be temporarily established at the Park entrance during construction. The staging areas would contain parked equipment and materials during non-work hours, including weekends. The staging areas would be located away from any Park activity center, except for the beginnings of the trail on Road 28, which would overlook the staging areas. The presence of stored equipment is not expected to detract substantially from the visitor experience because it is located away from the primary user areas in the Park and would be

difficult to view. To further reduce the impacts of the staging areas, the County would require the contractor to use chain-link fencing with shade cloth (Environmental Protection Measure R-5).

Construction Traffic

Construction activities can cause a distraction and nuisance to visitors and reduce the quality of the visitor experience. The magnitude of this impact depends on the nature of the disturbance (e.g., loud noise, rumbling trucks) and the proximity of the Park user to the disturbance. As described in Section 3.7.3, the increased traffic on Gaviota Beach Road from the construction would have only a minor effect on visitor traffic.

Temporary Loss of Two Campsites

Two campsites would be removed at the beginning of construction. They would be replaced at the end of the 18-month construction period with two new campsites. The temporary loss of two campsites would be noticeable during peak summer days, but not at other times of the year when the campground is not full and may even be closed.

Effect of Construction Noise on the Visitor Experience

As described in Section 3.4.3, certain construction activities would increase the ambient noise levels in the campground and portions of the day use area parking lot to levels that could cause a distraction or, in some cases, a nuisance that would disturb campers at their campsite during the daytime. The increased noise would not substantially affect users at the beach, pier, or upper trails. As described in Section 3.4.3, peak construction work at the bridge site from pile driving would increase ambient sound levels in the campground and day use area. The peak construction activities would only occur intermittently and for short durations (several days to a week) before they are replaced with other, less noisy activities. The magnitude of this impact could be reduced by several environmental protection measures. Under Environmental Protection Measure R-2, the County would provide information to State Parks on a weekly basis concerning the nature, location, and progress of construction. Environmental Protection Measure R-3 would prohibit pile driving prior to 8 AM or later than 4 PM. Environmental Protection Measure R-1 would prohibit construction during holidays, when the Park is busy.

3.3.4 Potential Impacts – Alternative Alignments

The impacts of these alternatives on recreational uses and the visitor experience at the Park would be similar to the impacts under the proposed action, though these alternatives would involve more construction-related truck trips.

3.3.5 Potential Impacts – Causeway Alternative

The impacts of this alternative on recreational uses and the visitor experience at the Park would be similar to the impacts under the proposed action. Initially, the causeway would have a greater visual impact than the proposed action because it would represent a larger concrete structure and would not be screened by roadside plantings. Over time, the visual impacts of the causeway and

its effect on the visitor experience at the Park would be expected to be similar to or slightly less than the visual impacts of the proposed action.

3.3.6 Potential Impacts – Alternative Bridge Site

This alternative would have fewer construction-related impacts (e.g., noise) on recreational users in the campground and day use area at the Park because most of the work would occur at a greater distance from the campground and day use area. However, the construction of this alternative would disturb hikers using Road 28. Overall, this alternative would have greater general construction-related traffic impacts on the Park than the proposed action due to the longer construction period and the greater amount of earthwork required.

The bridge under this alternative would have less visual impact than the proposed action because of its smaller size and its distance from Park users. However, this alternative would create a major rural road through the center of the Park.

3.4 NOISE

Noise is generally defined as a loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and that interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, perceived importance and suitability of the noise in a setting, time of day and type of activity during which the noise occurs, and the sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium such as air and are sensed by the human ear. Sound is generally characterized by a number of variables, including frequency and intensity. Frequency describes a sound's pitch and is measured in Hertz (Hz), and intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can reliably detect in a community environment is approximately 3 dB. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness; this relation holds true for loud sounds and for quieter sounds.

The method commonly used to quantify environmental sounds consists of evaluating sound according to a weighting system that replicates human hearing, which is less sensitive to low frequencies and high frequencies than mid-range frequencies. This frequency-dependent modification is called A-weighting, and the decibel level measured is called the A-weighted sound level (dBA).

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a mixture of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor called the L_{eq} (equivalent sound

level) is used. L_{eq} is the energy-mean A-weighted sound level present or predicted to occur during a specified time interval. It is the "equivalent" constant sound level that a given source would need to produce to equal the fluctuating level measured.

3.4.1 Existing Conditions

3.4.1.1 Noise-Sensitive Receptors

Noise-sensitive land uses or receptors are generally defined to include residential areas, hotels, motels, hospitals, nursing homes, convalescent hospitals, schools, libraries, churches, and parks. The only noise-sensitive land use at the project site is the Park. It includes the following primary uses and activity centers (see Figure 25): camping (tent and vehicle camping); day use activities such as picnicking; beach play and surfing; and fishing and boat launching from the pier.

Of these uses, camping would be the most noise sensitive. Portions of the camping area at the Park are located in proximity to the bridge site. No construction would occur at night when campers would be most sensitive to noise. During the daytime, many of the campers would be at the pier or beach, not at their campsite. However, some campers may remain at their campsites, particularly those with RVs. The beach and pier areas are not considered noise sensitive because they are located in high-noise environments due to wind and waves.

3.4.1.2 Ambient Noise Conditions

NISTAC conducted a noise survey at the Park on April 1, 2003, to evaluate existing sound levels and to assess the potential for construction noise impacts at the Park. Sound level measurements were performed at the following receptor locations in the Park:

- Site 1 – campground
- Site 2 – picnic spot in the day use area
- Site 3 – beach
- Site 4 – pier
- Site 5 - campground

Short-term (1 hour or less) attended sound level measurements were conducted with a Brüel and Kjær Model 2236 Sound Level Meter. During the field measurements, physical observations of the predominant noise sources were noted. The noise sources in the project area typically included surf noise, traffic on Highway 101, birds, local traffic, people, and occasionally low-flying aircraft.

Measured noise levels during daytime hours at the Park varied from 44 dBA L_{eq} (at ST-1) to 66 dBA L_{eq} (at ST-3). The major noise sources at the Park consisted of Highway 101 (a low-level background noise), birds, waves, and activity in the campground or day use area. The lowest noise levels were recorded in the campground, and were representative of rural settings. The highest sound levels occurred at the beach and on the pier, where wind and waves created high noise levels. The Southern Pacific railroad traverses the Park on a trestle bridge over the day use area. No trains passed by during the noise measurements. However, observations during

other days indicate that the noise levels throughout the Park are substantially elevated when trains pass over the bridge. Six to eight trains pass over the bridge on most days.

3.4.2 Potential Impacts – No Action Alternative

No construction-related noise impacts would occur under this alternative. Emergency repairs would generate smaller quantities of noise compared to the proposed action but these would occur on a periodic basis (as often as annually).

3.4.3 Potential Impacts – Proposed Action

3.4.3.1 Effect of Construction-Generated Noise on Park Users

Construction activity and traffic would increase the ambient noise level in the park during work periods, which would be 7 AM to 4 PM on Monday through Friday. Construction of the project would require about 18 months to complete, extending from July 2006 to December 2007 (preliminary dates). For most of the 2006–2007 winter, construction work would be suspended or greatly reduced.

Construction would be completed in five stages. A summary of the construction activities with the highest noise generation in each stage is presented in Table 12. Overall, the following construction activities would likely generate the most noise:

- Clearing and grubbing the temporary detour road
- Dumping of fill material by haul trucks on the roadway approach, followed by grading and compaction
- Desilting the creek channel at the bridge site and loading haul trucks to remove the material
- Driving the piles for the abutment and piers using a pile driver

The above activities would occur along the roadway approach and at the bridge site. The center of the noise generation would be located at varying distances from the campground, the day use area, the beach, and the pier, as shown in Table 12. Work at the bridge site would be about 400 feet from the center of the campground and 250 feet from the nearest campsite. In contrast, construction work along the roadway approach would be 500 feet to 1,350 feet from the center of the campground. Construction work would generally be 900 feet or more from the day use area. Construction of the new kiosk and campsites would occur within the Park, in direct proximity to campsites.

Table 12
Construction Activities and Distances From Park Use Areas

Stage	Duration (weeks)	Construction Activities with Highest Noise Generation	Distance to Center of Campground (feet)	Distance to Nearest Campsite (Feet)	Distance to Center of Day Use Area (Feet)
1	4	Large earthmoving equipment and trucks would be active during most of this period from east end of the approach road to the bridge site.	500–1,350	500–1,100	900–1,700
		Construction of new Park entrance would occur in the overflow parking lot.	375	200	650
2	1	Minor earthwork at turn-off to Hollister Ranch Road	400	250	650
3	17	Large earthmoving equipment and trucks would be active during most of this period from east end of the approach road to the bridge site, and at the bridge site.	650 feet from bridge site; 500–1,350 feet from roadway approach	500 feet from bridge site; 500–1,100 feet from roadway approach	900 feet from bridge site; 900–1,700 feet from roadway approach
4	10	Minor earthwork at Park entrance and at turn-off to Hollister Ranch Road	400	250	650
5	13	Large earthmoving equipment and trucks would be active during most of this period from east end of the approach road to the bridge site.	500–1,350	500–1,100	900–1,700
		Earthwork along bank next to overflow parking lot	375	200	650
		Construction of two campsite within the campground	75	50	400

Noise would be produced by the operation of heavy equipment, such as loaders and excavators, and by haul trucks and cement trucks at the work site. The level of noise generated from construction would vary based on the number of pieces of equipment operating, their locations, and the intensity of their use (e.g., idling versus full throttle). The magnitude of any increase in ambient noise levels in the Park would depend on the type of construction activity at any particular time, the noise level generated by various pieces of construction equipment, the site geometry (i.e., shielding from intervening terrain or other structures), and the distance between the noise source and receiver.

The exact complement of noise-producing equipment that would be in use during any particular period can only be estimated at this time. Based on information provided by the County, the maximum number of pieces of heavy equipment operating at any one time at the project site would be three pieces of heavy equipment and two haul trucks. Noisy construction activities could occur at up to two discrete locations at the project site at a given time.

To assess the potential noise effects from construction, this noise analysis used data from an extensive field study of various types of construction projects, including road and highway projects (USEPA 1971). The noise levels associated with various construction activities where all pertinent equipment is present and operating at a reference distance of 50 feet are listed below. These predicted noise levels are value ranges; the magnitude of construction noise emission typically varies over time because construction activity is intermittent and the power demands on construction equipment (and the resulting noise output) are cyclical.

- Clearing and grubbing 84 dBA L_{eq}
- Grading and excavation 88 dBA L_{eq}
- Concrete work 88 dBA L_{eq}
- Mechanical construction 79 dBA L_{eq}

For the prediction of noise levels in the Park during the noisiest construction activities, the average noise generation was assumed to be 88 dBA L_{eq} at a distance of 50 feet. This represents a reasonable worst-case assumption.

Noise levels generated by construction equipment decrease at a rate of approximately 6 decibels per doubling of distance from the source. This calculated reduction in noise level is based on the loss of energy resulting from the geometric spreading of the sound wave as it leaves the source and travels outward; this is also referred to as the inverse square law effect. Intervening structures that block the line of sight, such as buildings, further decrease the resultant noise level by a minimum of 5 dBA. The effects of molecular air absorption and anomalous excess attenuation reduce the noise level from construction activities at more distant locations at the rates of 0.7 dBA and 1.0 dBA per 1,000 feet, respectively.

The estimated peak noise levels at different areas of the Park during peak construction activities (excluding pile driving) and at different locations at the project site are presented in Table 13. Noise levels would increase in the campground and day use areas during major construction activities by up to 70 dBA L_{eq} in the center of the campground when earthwork and paving is occurring at the Park entrance. Peak construction work at the bridge site would increase ambient sound levels in the center of the campground and day use area by up to 65 dBA L_{eq} and 63 dBA L_{eq}, respectively. The peak construction activities would only occur intermittently and for short durations (several days to a week) before they are replaced with other, less noisy activities. Hence, the noise levels in Table 13 represent the worst-case conditions. The peak increase in ambient noise levels would be much less when the construction work is occurring at the eastern end of the roadway approach.

The predicted noise levels in Table 13 represent short-term, intermittent levels that would vary throughout the day when the construction work is occurring. These increases in noise levels would not occur for the full duration of the construction period. In general, they would occur for several days to a week, followed by a change in construction location or activity with lower noise generation. Also, construction would be limited to the hours 7 AM to 4 PM on weekdays and prohibited on weekends, major holidays, and in the afternoons (1 PM or later) before holidays.

Pile driving would generate noise that is unique in terms of noise level, audibility characteristics, and time pattern. The higher levels of pile driver noise (maximum levels of approximately 105

dBA at a reference distance of 50 feet) consist of very-short-duration impact sounds (a "bang" or "clang" noise) concentrated during a 10- to 30-minute period while an individual pile is being driven. These impact sounds attenuate with distance in the same manner as regular construction noise.

Table 13
Estimated Noise Levels During Peak Construction Activities

	Center of Campground		Nearest Campsite	Day Use Area	
Construction Location	Distance from Noise Source (Feet)	Estimated dBA L_{eq}	Estimated dBA L_{eq}	Distance from Noise Source (Feet)	Estimated dBA L_{eq}
Work on the southern end of the roadway approach	500	68	70	900	63
Work at the northern end of the roadway approach	1,100	62	64	1,700	57
Work at the bridge site (excluding pile driving)	650	65	66	900	63
Work at the Park entrance	400	70	72	650	65

The estimated maximum noise level at the nearest campsite to the bridge would be 84 dBA L_{max}. The average (L_{eq}) noise levels during pile driving would be several decibels lower than the L_{max} levels, or approximately 82 dBA L_{eq} at the nearest campsite. These levels would be below occupational hearing levels and thus would not be detrimental to the hearing of a person of normal sensitivity. However, these noise levels would cause a major nuisance and possible discomfort to nearby campers. Pile driving is expected to require about 10–15 days and occur in September or October 2006. The above analysis is based on impact-type pile driving. Depending on the pile type being driven, vibratory pile driving may be noticeably quieter, by as much as 15 dBA.

In summary, peak construction work at the bridge site (excluding pile driving) would increase ambient sound levels in the center of the campground and day use area by up to 65 dBA L_{eq} and 63 dBA L_{eq}, respectively. Peak noise levels at the nearest campsite would be up to 72 dBA L_{eq}. The peak construction activities would only occur intermittently and for short durations (several days to a week) before they are replaced with other, less noisy activities. Pile driving at the bridge would temporarily increase noise levels at the nearest campsite by up to 82–84 dBA L_{eq}. These levels would be temporary and intermittent.

Environmental Protection Measure R-2 would alert prospective campers of the schedule for pile driving to reduce conflicts and unexpected nuisance. In addition, pile driving would not occur prior to 8 AM or after 4 PM (Environmental Protection Measure R-3). Additional measures (Environmental Protection Measures N-1 to N-5, Section 2.2.4) would reduce construction noise generation.

3.4.3.2 Noise from Vehicles on the New Road and Bridge

The proposed bridge and roadway approach would be about 12 feet higher than the current crossing and road. As such, there is an increased potential for noise from vehicles passing on Gaviota Beach Road and the bridge to affect the Park campground and day use area. Noise attenuation modeling indicates that the potential increase would be less than 1 dBA L_{eq}. The small increase is due to the low traffic speeds and overall low traffic volume on the road. Thus, Park users are unlikely to notice the increased noise due to the elevated roadway and bridge.

3.4.3.3 Vibration from Construction Activities

Heavy construction equipment and operations can create perceptible vibrations at nearby receptors. Most construction work would occur at distances of 500 feet or more from the nearest campsite. Pile-driving activities, if necessary, would take place approximately 500 feet from the nearest sensitive land use. Depending on soil conditions, vibration from pile driving may be perceptible and cause a nuisance to campers, if present. Pile driving is expected to be required about 10–15 days and to occur in September or October 2006. Environmental Protection Measure R-2 would alert prospective campers of the schedule for pile driving to reduce conflicts and unexpected nuisance. In addition, pile driving would not occur prior to 8 AM or after 4 PM (Environmental Protection Measure R-3).

3.4.4 Potential Impacts – Alternative Alignments

The construction noise impacts of these alternatives would be similar to those of the proposed action because the duration and type of construction would be similar. However, the Easterly Alignment would be located in closer proximity to the campground than the proposed action and for this reason the construction noise levels associated with this alternative may be slightly higher.

3.4.5 Potential Impacts – Causeway Alternative

The noise impacts of this alternative would be greater than those of the proposed action because of the extensive pile driving associated with the 168 piers for the causeway. However, the overall duration of construction would be slightly less.

3.4.6 Potential Impacts – Alternative Bridge Site

This alternative would have less construction-related noise impact on recreational users at the Park because most of the work would occur at a greater distance from the campground and day use area. However, temporary noise impacts would result from the removal of the existing bridge and roadway, and the construction in the upper canyon would disturb hikers using Road 28.

3.5 AIR QUALITY

3.5.1 Existing Conditions

The climate of the South Coast region is characterized by relatively low rainfall, with warm summers and mild winters. Annual precipitation averages 16 inches, with approximately 95 percent of that falling between November and April. Average monthly temperatures range from a high of 75 degrees Fahrenheit in September to a low of 40 degrees Fahrenheit in December. Santa Barbara County's air quality is influenced by both local topography and meteorological conditions. Surface and upper-level wind flow varies both seasonally and geographically in the County, and inversion conditions common to the area can affect the vertical mixing and dispersion of pollutants. The project site is located within 2,000 feet of the Pacific Ocean. Thus, the local meteorological conditions are dominated by the marine influence. The site is exposed to high wind action, a high moisture regime from seasonal fog, and cool temperatures.

The Federal Clean Air Act Amendments of 1970 established National Ambient Air Quality Standards (NAAQS) for six "criteria pollutants." These include photochemical ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter, and lead. The California Clean Air Act of 1977 created stricter California Ambient Air Quality Standards (CAAQS) for the state. An area is in nonattainment for a pollutant if the applicable NAAQS or CAAQS for that pollutant has been exceeded more than once in three years. Presently, Santa Barbara County is in attainment with NAAQS or is unclassified for all criteria pollutants. The County of Santa Barbara is in nonattainment with CAAQS for the 1-hour ozone (O_3) standard and for the standard for particulate matter (PM_{10}) and in attainment for all other CAAQS pollutants. There are also heavily congested intersections within the City that may approach the California 1-hour standard of 20 parts per million for carbon monoxide (CO) during peak traffic hours.

Ozone is formed in the atmosphere through a series of chemical reactions involving NO_X, reactive organic compounds (ROCs), and sunlight. Ozone is classified as a "secondary" pollutant because it is not emitted directly into the atmosphere. The major sources of ozone in the County are motor vehicles, the petroleum industry, and the use of solvents (paint, consumer products, and certain industrial processes). PM_{10} is generated by a variety of sources, including windblown dust, grading, agricultural tilling, road dust, and quarries.

The Santa Barbara County Air Pollution Control District (APCD) has responsibility for maintaining and improving air quality within Santa Barbara County. The 2001 Clean Air Plan developed by the APCD identifies actions to meet the requirements of both the federal Clean Air Act and the California Clean Air Act. The Clean Air Plan is periodically updated by the APCD. The 2001 Clean Air Plan has been adopted as part of the State Implementation Plan. The 2004 Clean Air Plan is the most recent one prepared by the APCD.

Because Santa Barbara County is in attainment or is unclassified for all criteria pollutants, the General Conformity Rule of the federal Clean Air Act does not apply.

3.5.2 Potential Impacts – No Action Alternative

Under this alternative, the proposed bridge would not be replaced. Hence, there would be no construction-related emissions of pollutants. Emergency repairs over the years would generate periodic, smaller quantities of emissions than the proposed action.

3.5.3 Potential Impacts – Proposed Action

3.5.3.1 Construction-Related Emissions

Construction of the proposed bridge would result in temporary emissions of gaseous pollutants and particulate matter from:

- Haul trucks, worker vehicles, and supply trucks accessing the project site
- Earthmoving equipment that is engaged in excavation, backfilling, and compacting at the project site
- Construction equipment involved in concrete and pavement work, road surfacing, and hauling materials

Excavation and earthwork activities at the project site would also generate fugitive dust.

Construction of the project would require about 18 months to complete, extending from July 2006 to December 2007 (preliminary dates). For most of the 2006–2007 winter, construction work would be suspended or greatly reduced.

As described in Section 2.2.2.1, construction would be completed in five stages. A summary of the construction activities with the greatest number of pieces of construction equipment operating at one time and the highest haul truck volumes is presented in Table 14. The stage with the peak combined emissions from site construction and haul truck trips would be Stage 3 when the roadway approach is constructed. This element of the project would require the greatest amount of earthmoving equipment and haul truck trips.

Table 14
Construction Stages With the Highest Potential Emissions

Stage	Duration (weeks)	Activities with the Highest Emission Levels (Noted in Bold)	Peak Daily Truck Trips*
1	4	▪ Desilt the creek downstream of the bridge ▪ **Construct temporary detour road and crossing** ▪ Construct temporary Park entrance and kiosk ▪ Install sign directing traffic to two routes across the floodplain ▪ Relocate the generator	100 (detour road fill)
2	1	▪ Remove existing kiosk ▪ **Construct last section of detour to Hollister Ranch**	20
3	17	▪ Demolish bridge and desilt creek upstream of bridge ▪ Construct bridge piers and abutments; construct deck ▪ **Construct roadway approach, including embankment, rock slope, wildlife culverts, and pavement** ▪ Install rock slope protection upstream of bridge	100 (for road embankment)
4	10	▪ Complete bridge construction (if necessary) ▪ **Remove detour to Hollister Ranch; route Ranch traffic to new roadway and bridge** ▪ Construct new Park entrance and kiosk	40

Table 14
Construction Stages With the Highest Potential Emissions

Stage	Duration (weeks)	Activities with the Highest Emission Levels (Noted in Bold)	Peak Daily Truck Trips*
5	13	▪ Route all traffic to new roadway and bridge ▪ **Remove temporary detour road and crossing** ▪ Regrade creek channel downstream of bridge ▪ Construct rock slope protection downstream of bridge ▪ Construct new campsites and repair parking lot ▪ Initiate post-construction habitat restoration efforts (mitigation)	75

The pollutants generated from construction equipment and haul trucks include nitrogen oxides, particulate matter, carbon monoxide, sulfur dioxide, and reactive hydrocarbons. Air quality impacts from construction equipment and haul truck emissions as well as from fugitive dust emissions from earthwork would adversely affect local air quality. The emissions would be restricted to a localized area and would only occur on weekdays during the construction period. The emissions would be temporary in nature and constitute a small fraction of the total County-wide emissions from all point, mobile, and area sources. All construction activities would be carried out in accordance with applicable federal, state, and local laws and regulations concerning the prevention and control of air pollution. Also, emissions from construction equipment would be reduced using standard APCD-required emission controls, as listed in the Environmental Protection Measures A-1 and A-2 (Section 2.2.4).

The Gaviota area is subject to high winds throughout most of the year, which would disperse pollutants from the vehicles using Highway 101, Gaviota Beach Road, and Hollister Ranch Road as well as the construction activities at the Park. Hence, elevated concentrations of vehicular and equipment emissions are not anticipated.

Total emissions associated with construction are expected to be well below the "significant emissions" thresholds established under USEPA's Prevention of Significant Deterioration program (40 CFR Part 51.166[b][23][i]). Emissions below these thresholds would not cause or contribute to a violation of a NAAQS.

3.5.3.2 Consistency with Clean Air Plan

For commercial, industrial, and residential development projects, the County and APCD require the evaluation of a project's consistency with the Clean Air Plan (CAP) growth projections. By definition, consistency with the CAP means that direct and indirect emissions associated with the project are accounted for in the CAP emissions growth assumptions and the project is consistent with policies adopted in the CAP. The proposed action would not cause population growth and is not considered a commercial, industrial, or residential development project. Hence, the project is consistent with the CAP.

3.5.4 Potential Impacts – Alternative Alignments

The construction-related emissions of these alternatives would be slightly greater than the emissions associated with the proposed action because more imported fill would be required than for the proposed action.

3.5.5 Potential Impacts – Causeway Alternative

The construction-related emissions from construction equipment and haul trucks are expected to be similar to, or possibly slightly lower than, those associated with the proposed action.

3.5.6 Potential Impacts – Alternative Bridge Site

This alternative would have greater general construction-related emissions than the proposed action due to the longer construction period and the greater amount of earthwork.

3.6 VISUAL RESOURCES

3.6.1 Existing Conditions

3.6.1.1 Visual Setting

Landforms and Vegetative Cover

The area surrounding the Park is rugged and generally undeveloped other than major circulation connections and minimal ancillary ranch structures. Rock outcroppings of the Santa Ynez Mountains surround the Park and are clearly visible rising above the coastal marine terrace. The character of the region is undeveloped and imparts a rural and natural feeling with the mountainous backdrop and the ranches located both north and southeast of Gaviota Pass and the Park.

The surrounding Santa Ynez Mountains rise dramatically from the brief coastal marine terrace and are topped with bare buff color rock fringed in coastal sage scrub and chaparral. A mix of coastal sage scrub and chaparral covers the foothills of the mountains above the coastal terrace, which is dominated by grassland. Prior to the 2004 fire, the creek and surrounding floodplain contained the dense mature willow woodland that is common to creek corridors along the central coast of California.

Surrounding and On-Site Uses

Ranching is the primary use in the area immediately surrounding the Park. Hollister Ranch to the west is a private subdivision of smaller ranches and residential lots and is accessed by a private entry open only to owners of ranch property. East of the Park is more coastal ranch land, and an oil facility is located adjacent to Highway 101 approximately 1.5 miles to the east. The Highway 101 corridor is a major feature in the region, running parallel to the coast before it turns abruptly north at Gaviota Creek and winds through Gaviota Pass.

Park uses include camping, picnicking, hiking, fishing, surfing, beach play, and boating. The campground and day use areas are broad, flat areas that are mostly paved. Little landscaping is present in the developed portions of the Park, which is mostly featureless except for two restrooms, a small store, and the camp host's trailer. The dominant visual feature of the developed portion of the Park is the large wooden railroad trestle bridge (800 feet long) that traverses the mouth of Gaviota Creek Canyon in a dramatic and eye-catching manner. Beyond the trestle bridge, the Gaviota Pier is a dominant visual feature that extends into the nearshore waters.

Visual Character

The visual character of an area is defined as the landforms, water, vegetative patterns, and existing modifications that give an area its distinguishing qualities. The rising form of the Santa Ynez Mountains dominates the project site backdrop. The level topography of the creek, flat and wide, contrasts with the vertical rise of the mountains that interrupt the continuity of the mountain range at Gaviota Pass. The area along the creek and floodplain is typically covered by dense riparian vegetation, noticeably brighter green than the gray and olive colored coastal scrub on the surrounding slopes. The Park campground and beach parking area further emphasize the horizontal plane of the floodplain. The horizontal line of the trestle and the multiple vertical piers are the dominant visual features at the project site.

Visual Quality

The visual quality of an area is a subjective issue. Visual quality is concerned with the overall attractiveness of an area and the capability of preserving this attractiveness when new features are introduced.

The distinct elements of the landscape around the project site create a visual image that is highly memorable. The structure of the railroad trestle and the unusual rock outcroppings on the surrounding slopes adjacent to the undeveloped coastline create a scenic and unique visual vignette. Although the trestle is a fabricated component in an otherwise natural setting, the century-old historical and architectural nature of the structure adds visual interest to the scene and imparts a feeling of California's past. The individual landscape components are strongly unified, resulting in a visually coherent scene around the project site.

In general, "low" visual quality is a barren plain cluttered with scattered urbanization and "high" visual quality is a landscape such as the Big Sur Coast in Central California. The Santa Barbara coast, while similar to the Big Sur Coast, provides slightly less dramatic view opportunities; thus, the quality of the existing visual environment is rated moderately high.

3.6.1.2 Characterization of Viewers

Viewer Exposure

The number of viewers, the distance of the viewing location, and the duration of views are all considered in determining viewer exposure. Viewer groups considered in this analysis include travelers along Highway 101 and Gaviota Beach Road as well as Park users.

Highway 101 is located directly east of the project site. Approximately 70,000 vehicles travel north- or southbound along this stretch of Highway 101 daily. Just south of Gaviota Pass, the roadway curves sharply to the east away from the Park. As southbound travelers pass Gaviota State Park, the Park is briefly in the travelers' primary cone of vision before the highway curves away orienting the viewer to the east. Northbound, the highway makes a sharp curve to the north just south of Gaviota Pass. The highway slopes upward so that views of the campground are not readily available to northbound travelers. Typical rates of speed range from 50 to 70 mph; hence, views oriented in the direction of Park from Highway 101 are brief in duration because the driver's attention is on navigating the curve in Highway 101 at a high speed. From Highway 101 views of Gaviota Beach Road may be glimpsed, but vegetation and topography, along with the rate of travel, would limit any glimpse to a second or less. It would be difficult for viewers on Highway 101 to identify and visually examine the bridge site, which is obscured by vegetation during this short period of time.

As noted in Section 3.4.1, the average daily traffic on Gaviota Beach Road is about 1,100 trips, of which about 60 percent are visitors to the Park and the remainder people traveling to or from Hollister Ranch. Vehicles entering Gaviota Beach Road from Highway 101 travel down a slope to the floodplain, where the narrow road is located. Dense trees and shrubs occur on both sides of the road, which effectively block most of the views to the mountains and the ocean.

Sensitivity Level

The visual sensitivity level deals with the public's expectation of the area and their reaction to development within the context of the area's visual quality. Relative sensitivity will vary with the viewer's activities, expectations, and attitudes.

Given the high quality of the visual environment along the Santa Barbara coast and the recreational setting of the Park, day use visitors and campers will be strongly conscious of surrounding views. Residents of Hollister Ranch may make one or more trips through the project site in a single day; as a result, they may be less sensitive to the visual environment than a visitor seeing the area for the first time. However, it is probable that most ranch residents reside in the Gaviota area, in part because of the visual environment and are likely to have concerns over any project or activity that would result in negative impacts to views. Overall, viewer sensitivity at the project site is rated as moderately high.

3.6.1.3 Visual Observation Points

Visual observation points are locations in proximity to the project site that best represent overall views toward the bridge site as seen from public roads and other public places, such as recreation areas, parks, and trails. Visual observation points are typically established in locations that provide high visibility of the project site to relatively large numbers of viewers and/or sensitive viewing locations such as vista points.

A review of baseline project data, including project documentation and site background information, was conducted to gain familiarity with the existing landscape, visual resource issues of concern, viewer sensitivity, and the characteristics of the project. After data review, four visual observation points were selected to assess the visual impacts of the new bridge:

- **Visual Observation Point 1 (Road 28).** This location is a view south toward the bridge site from the Road 28 trail. This view was selected as a representative view of the bridge site as seen by Park users hiking in the vicinity of the project site. From this observation point, approximately 0.5 miles north of the campground, views of the project site are obscured by typically dense intervening riparian vegetation.
- **Visual Observation Point 2 (Park Entrance).** This location is a view southwest toward the bridge site from the park entrance at Highway 101. This view is representative of the site as seen by travelers turning onto Gaviota Beach Road from southbound Highway 101. The junction of Gaviota Beach Road and Highway 101 is approximately 0.3 miles from Gaviota Bridge. Immediately after turning onto Gaviota Beach Road, the elevation of the roadway slopes downward and riparian vegetation obscures views of the ocean and the bridge site. Only glimpses of the Park are available through the intermediate vegetation.
- **Visual Observation Point 3 (Campground).** This is a view north toward the bridge site from the park campground. Camp sites are 500–1,000 feet from the bridge site. As a result of intervening vegetation, views of the bridge site are limited to the area of the campground near the kiosk. At other locations in the campground, mature trees and auxiliary campground structures obscure the bridge site from view.
- **Visual Observation Point 4 (Day Use Area).** This is a view north toward the bridge site from the beach day use parking area. This view is representative of the site as seen by day use park visitors from the restrooms, mini-mart, parking lot, beach, and wharf. From this observation point, the bridge site is approximately 800–1,300 feet to the north. As with observation point 3, intervening vegetation and structures prevent direct views of the bridge site and the approach roadway. The trestle and bluff would prevent views of the bridge site from the pier or beach.

3.6.2 Potential Impacts – No Action Alternative

The visual impacts of the proposed action would be avoided under this alternative. Emergency desilting may cause periodic visual impacts from excavation and stockpiling of sediments near the bridge site and the Park entrance.

3.6.3 Potential Impacts – Proposed Action

3.6.3.1 Impact Assessment Methodology

Visual simulations of the new bridge and roadway embankment were created using site photographs and computer graphics. Baseline photographs were taken with a lens comparable to the human eye—the photographs are not wide angle or telephoto in scope. The baseline photographs were used to construct visual simulations. Impacts were assessed by comparing the baseline photos to the photos with project simulations. Visual impact severity is determined through an evaluation of visual contrast, project dominance, and view impairment at each visual observation point.

Photo-simulations were developed for views immediately after construction and for views 5 years after construction, when roadside landscaping would be of sufficient height to provide

screening. These simulations help in determining the magnitude of long-term impacts and the potential effectiveness of the proposed slope revegetation. The visual simulations are available for examination from FEMA if requested.

3.6.3.2 Visual Impacts

Impacts of New Bridge and Roadway Approach

The bridge and roadway design would be generally compatible with the surrounding area for several reasons. First, the proposed bridge, road, and guard rails are common landscape elements in the Highway 101 corridor leading to the Park. Also, the Park contains asphalt and concrete that would be similar. Second, the bridge deck, its barrier rail, and the guard rail would have aesthetic treatments to increase their compatibility with the natural setting in the Park. The concrete rail and bridge deck would be designed and colored to simulate a wooden bridge. The guard rails along the road would be colored to mimic wood or earth tones. The final aesthetic treatments would be approved by BAR. In addition, the County would seek input on the treatment from State Parks, per Environmental Protection Measure R-4 to address concerns about the effect of the project on the visitor experience. Third, the County would install riparian trees and shrubs on both sides of the roadway to re-create the existing tree-lined roadway over time. Finally, the western bank downstream of the bridge with the proposed buried bank protection would be revegetated with willow trees that would effectively screen the bridge from Park visitors in the campground and day use area. For these reasons, the visual impacts of the bridge and roadway described below would generally be considered minor.

Impacts from the four visual observation points are summarized below based on the visual simulations.

- **Impacts from Visual Observation Point 1 (Road 28).** As noted above, views of the bridge site and approach roadway are obscured by dense intervening riparian vegetation on the floodplain. This vegetation, combined with the distance between the viewer and the road, would prevent direct or distinct views of the new bridge site and the approach roadway. Thus, the new bridge would not alter substantially views from this observation point. The new roadway and bridge would be visible from the upper portions of the trail; however, at this location views are distant and visual change would be negligible in the context of the entire landscape. Hikers would pass directly by the new bridge at about 1,000 feet from the trailhead. This view of the new bridge and roadway would be distinct. However, the change in the visual character is not considered substantial because: (1) the new bridge and roadway would occupy the same location as the current bridge and roadway; (2) the hikers' orientation and purpose is to move from the developed Park to the wildlands, and for this reason their visual focus would be forward towards the upper watershed; and (3) the new bridge and roadway would be parallel to the viewer's line of sight, and as such, would not occupy a substantial portion of his or her cone of vision.
- **Impacts from Visual Observation Point 2 (Park Entrance).** From the intersection of Gaviota Beach Road and Highway 101, the existing bridge is not visible, and most of the road is obscured by dense floodplain vegetation. The raised elevation of the proposed bridge would result in some glimpses of the bridge railing and roadway from the observation point. The majority of the elevated roadway connecting to the bridge (with rip-rap on the north

facing embankment) would be screened from view by the riparian vegetation. For those viewers passing the site on Highway 101, the rate of travel and the shifting orientation of the roadway would prevent views of the new bridge and roadway.

From this observation point, a cluster of eucalyptus trees along Gaviota Beach Road are noticeable above the lower creek vegetation. The project would require the removal of these trees along with riparian shrubs along either side of the road. Although the trees do add interest to the horizon, they are not a critical element in the scenic landscape. Another stand of eucalyptus, located on the bluff immediately west of the railroad trestle, provides similar vertical punctuation to the view in the same line of site as the trees to be removed. The tree removal would not substantially change the character of the area. In addition, these trees would be replaced by the proposed roadside landscaping.

- **Impacts from Visual Observation Point 3 (Campground).** Views of the bridge would be obscured by auxiliary structures, vegetation around the perimeter of the campground, and nearby riparian vegetation. With the removal of vegetation along the existing road, the slope bank of the new road approach and the guard rail paralleling the approach would be visible. However, the rip-rap used to construct the elevated approach would be covered with soil and planted. With the planned landscape planting, the rip-rap would not be visible and the bank would blend with the vegetation on the slopes above the road in the adjacent riparian area after several years.
- **Impacts from Visual Observation Point 4 (Day Use Area).** As noted earlier, views of the bridge and approach roadway are not visible from the day use area and beach area. The elevated road and bridge would also not be visible due to the distance and intervening vegetation. Construction of the project would not alter existing views from this observation point.

Construction of the new bridge and roadway approaches would not cause a substantial long-term visual impact to public viewers from key observation points in the Park or from the Highway 101 corridor because the project elements would not be readily visible due to distance and intervening vegetation. The proposed elevated roadway approach and bridge would also not block any scenic views from the Park or other public viewpoints. Long-term visual impacts would be reduced by the proposed aesthetic treatment of the bridge and guard rails, the proposed restoration of the temporary detour road, and the proposed riparian planting along the road embankment and along the rock rip-rap near the overflow parking.

Short-Term Impacts of the Detour Road

Bridge construction would require the removal of dense vegetation on each side of the existing road and along the temporary detour road. There would be a temporary, substantial visual impact that would result from removing a corridor of dense vegetation to construct these roads. However, this impact would be considered minor to moderate because (1) the corridor for the temporary detour road would be fully restored with riparian vegetation within several years, and (2) the temporary road would blend in with the existing riparian vegetation in the floodplain because it would have a low profile and elevation. Also, the detour road would not have any rock rip-rap.

Visual Impacts of Construction Activities

Construction impacts would be generally out of character with the undeveloped environment surrounding the Park. These impacts would be expected when viewing construction equipment, grading activities, and the stockpiling of construction materials. However, this impact would not be considered substantial because (1) it would be temporary, (2) many visitors would recognize the public safety benefits of the project and view the construction work in a neutral manner, and (3) most of the construction work would not be visible to Park visitors due to distance and intervening vegetation. Hence, this impact would be considered minor.

3.6.4 Potential Impacts – Alternative Alignments

The visual impacts of these alternatives would be similar to those of the proposed action because the design would be identical, and the location of the alignments would be in close proximity to the alignment of the proposed action.

3.6.5 Potential Impacts – Causeway Alternative

Initially, the causeway would have a greater visual impact than the proposed action because it would represent a larger concrete structure and it would not be screened by roadside plantings. The causeway would have higher visibility to travelers on Highway 101 than would the proposed action. However, over time, the causeway is expected to blend in with the floodplain as riparian vegetation grows adjacent to the causeway and provides screening that would appear more natural than the roadside plantings for the proposed action. Overall, the visual impacts of the causeway and the effect on the visitor experience at the Park are expected to be similar to or slightly less than the impacts of the proposed action.

3.6.6 Potential Impacts – Alternative Bridge Site

The bridge under this alternative would have less visual impact than under the proposed action because of its smaller size and its distance from Park users. However the presence of a major rural road through the center of the Park would represent a new impact, particularly because of the cut slopes along the enlarged road above the Park.

3.7 TRAFFIC AND CIRCULATION

3.7.1 Existing Conditions

Gaviota Beach Road and Bridge are located in the Park The road and bridge over Gaviota Creek provide access to the Park and the community of Hollister Ranch (Figure 1). The road and bridge are owned and maintained by Santa Barbara County. These facilities are located in a County right-of-way that crosses the Park.

The existing two-lane road descends from an at-grade intersection with Highway 101 along a southerly alignment that leads directly to the Park entrance (Figure 2). The road is about 18 to 20 feet wide with a center stripe. It does not meet County standards for a rural road, County standards call for a 24-foot width with 4- to 10-foot shoulders. Hence, passing vehicles,

particularly RVs or trucks, must stop to allow one vehicle to pass. There are no shoulders along the road.

Hollister Ranch Road intersects Gaviota Beach Road immediately north of the Park entrance (Figure 2). This road is owned and maintained by Santa Barbara County from the Park to the entrance gate at Hollister Ranch. At that point, Hollister Ranch Road is a private road.

Gaviota Beach Road provides access to the Park and Hollister Ranch. As shown in Table 15, more than half of the daily traffic is Park visitors. The total daily trips of 1,127 are relatively low for a rural road. The peak morning and afternoon trips on Gaviota Beach Road are about 113 trips (AM) and 146 trips (PM). This volume represents an average frequency of about two vehicles per minute during peak hours. At other times of the day, the traffic volume is substantially less.

Table 15
Existing Traffic Volume

Roadway	Total Daily Trips	AM Peak Hour Trips (11:00)		PM Peak Hour Trips (2:00)	
		Northbound (out)	Southbound (in)	Northbound (out)	Southbound (in)
Gaviota Beach Road	1,127	48	65	75	71
Hollister Ranch Road	467	20	32	29	22

* Source: Santa Barbara County Public Works Department in-house files. Data from August 2002.

3.7.2 Potential Impacts – No Action Alternative

The traffic impacts of the proposed action would be avoided by this alternative. Emergency repairs over the years would generate periodic, smaller quantities of construction traffic than the proposed action. However, these could occur on an almost annual basis after substantial flood events. Further, traffic would be prohibited from using Gaviota Creek Bridge entirely after major floods.

3.7.3 Potential Impacts – Proposed Action

3.7.3.1 Long-Term Impacts of Improved Road and Bridge

The proposed action is designed to provide reliable year-round access to the Park and Hollister Ranch by constructing a bridge and roadway approach above the 100-year flood elevation. The new road would be wider (34 feet wide) with two striped 12-foot-wide travel lanes and two 5-foot-wide paved shoulders. The shoulders would also be striped as Class II bike lanes. Metal guard rails would be present on both sides of the road. The road and bridge would provide safer roadway operations than the existing road and bridge due to the greater width, the presence of shoulders, and the guard rails. In addition, the Class II bike lanes would provide new and safer access for bicyclists. The long-term impacts of the new roadway approach and bridge are considered beneficial for traffic flow and safety.

3.7.3.2 Effect of Detour on Other Traffic

Access along Gaviota Beach Road and Hollister Ranch Road would be maintained 24 hours a day throughout the 2-year construction period. As described in Section 2.2.2.2, a temporary detour road would be constructed east of and parallel to the existing roadway, as shown on Figure 12. A paved road with two 12-foot-wide lanes and two 1-foot wide unpaved shoulders would be constructed. A temporary entrance to the Park and a temporary connection to Hollister Ranch Road would also be constructed. Vehicles would be directed by signs and traffic cones to the detour road. The public would not be required to traverse any active construction area; hence, there would be no delays, nor would flagmen be required.

The temporary detour road would be wider than the existing road and would therefore provide a safer operation for passing vehicles, particularly RVs and vehicles with boat trailers. The existing vehicle turn-around loop in the Park would be available throughout construction. Hence, there would be no restrictions on the types or volume of vehicles accessing the Park or Hollister Ranch.

The use of a temporary detour to access the Park and Hollister Ranch would represent a minor inconvenience to travelers because it would require them to follow new routes through the project site, which would change depending on the construction stage.

3.7.3.3 Effect of Temporary Creek Crossing on Park Access

During the winter months (December 1 to April 1), construction work in the creek would be suspended. Construction work outside the creek may occur, as needed. However, it is likely that there may be several months in the winter of 2006–2007 when no construction work is occurring. The public would continue to use the temporary detour road during the winter. This road would have a creek crossing with three 36-inch-diameter, approximately 78-foot-long steel pipe culverts and a 65-foot-wide earthen embankment across the creek channel. The culverts at this crossing would provide the same capacity as the current crossing. The road would be overtopped by a severe storm, which would temporarily disrupt access to the Park and Hollister Ranch. Depending on the severity of the storm, the crossing may or may not need to be repaired or sediment may or may not need to be removed from the crossing site. The presence of the temporary creek crossing during the winter of 2006–2007 is not considered an adverse impact because it would provide the same level of access and reliability relative to the existing crossing. Both the existing and temporary crossing would be susceptible to outage during high storm flows. The impact of constructing the temporary creek crossing is considered neutral.

3.7.3.4 Effect of Construction Traffic on Roadway Operations

The construction of the new bridge would occur during the summer and fall of 2006 and 2007. Construction traffic would consist of worker vehicles, supply trucks, and haul trucks. The average and peak truck trips associated with the various construction stages are presented in Table 16. The highest number of truck trips would occur during Stages 1 and 3. Stage 1 would require the importation of up to 10,000 cubic yards of clean fill to construct the temporary detour. Stage 3 would require importation of fill, rock, and concrete for the construction of the roadway approach and bridge.

Table 16
Summary of Truck and Worker Vehicle Trips

Stage	Duration (weeks)	Number of Worker Vehicle Trips*	Avg. Daily Truck Trips*	Peak Daily Truck Trips*
1	4	15	50	100
2	1	10	10	20
3	17	25	75	100
4	10	15	20	40
5	13	15	20	75

*All trips are round trips (to and from the site).

Haul and concrete trucks would only use a portion of Gaviota Beach Road, that is, they would travel from Highway 101 to the roadway approach, which would be used for staging, construction, and access to the bridge site. Hence, construction traffic would only share a small length of Gaviota Bridge Road (about 550 feet) with public traffic. The maximum daily construction traffic would be 125 trips. This is about 10 percent of the average daily traffic on Gaviota Beach Road. The addition of this traffic on a small reach of the road would not exceed the roadway capacity. The additional traffic could cause a slight inconvenience to travelers along Gaviota Beach Road due to a slight increase in the number of vehicles. However, this impact would be minor. The peak daily construction-related traffic would occur intermittently and for only a few days at a time.

The construction contractor would not be allowed to park any vehicles in the campground or day use area of Gaviota State Park. Hence, there would be no substantial effect on parking in the Park.

As described in Section 2.2.4, the County would prohibit construction work on the following holidays, and on the days preceding these holidays, to reduce conflicts with visitors to the Park: Memorial Day, Independence Day, and Labor Day.

In summary, the additional construction-related traffic on Gaviota Beach Road, when combined with current traffic, would not exceed the roadway capacity. The additional traffic might cause a slight inconvenience to travelers along Gaviota Beach Road due to a slight increase in the number of vehicles. This temporary and intermittent impact during the construction period is considered minor.

3.7.3.5 Effect of Truck Ingress and Egress on Traffic Safety

Haul trucks would enter the project site by two methods:

- Trucks on southbound Highway 101 would turn directly onto Gaviota Beach Road, using the road shoulder for a transition. There is a 30-degree lane from the highway to Gaviota Beach Road, which provides for a safer movement from the highway to the road, avoiding a sharp 90-degree turn.

- Trucks on northbound Highway 101 would utilize a left turn lane that crosses the southbound lanes. This movement is considered safe for trailer trucks due to the extensive sight distance available.

Haul trucks would leave the project site by two methods:

- Trucks heading southbound on Highway 101 would turn directly onto Gaviota Beach Road, using the road shoulder for transition.
- Trucks traveling northbound on Highway 101 could turn left onto the highway, using space in the intersection between the north and southbound lanes. Although this movement is considered safe for vehicles and small trucks, it is less safe and easy for trailer trucks because they could extend into the southbound lane while waiting to merge into the northbound lane. As described in Environmental Protection Measure T-1 (Section 2.2.4), the County would prohibit this movement by trailer trucks. Instead, they would be required to travel southbound on Highway 101 for 1.3 miles to the Gaviota Station Road interchange (oil terminal site), exit the highway, and use an overcrossing to join the northbound lanes of Highway 101.

3.7.4 Potential Impacts – Alternative Alignments

The traffic impacts of these alternatives would be similar to the impacts of the proposed action because the construction duration, the quantities to be hauled, and the phasing would be the same as for the proposed action.

3.7.5 Potential Impacts – Causeway Alternative

This alternative would have the same general construction-related traffic impacts as the proposed action.

3.7.6 Potential Impacts – Alternative Bridge Site

This alternative would have greater general construction-related traffic impacts than the proposed action due to the longer construction period and greater amount of earthwork required. Also, this alternative would require that visitors take a more complex route to reach the Park, as they would need to travel down the old Hollister Ranch Road and navigate two hairpin turns to reach the kiosk. The entrance to the Park would need to be modified to provide the appropriate turning radius for RVs and vehicles with boat trailers.

3.8 CULTURAL RESOURCES

3.8.1 Existing Conditions

3.8.1.1 Prehistory

The river valleys and floodplains to the south and north of the project area, along with the fringing coastline, have supported a continuous cultural occupation for at least the last 8,000 years, suggesting the early emergence of non-agricultural village-based groups in the region.

Current archaeological evidence suggests that a relatively small population existed in these areas, but by 2,000 years ago, populations appear to have expanded considerably into resource-rich coastal and near-shore estuarine environments (Dillon 1990:6). Accounts by early Spanish explorers indicate that at the time of European contact with this area of the California coast, some of the large coastal villages had hundreds of occupants and were engaged in both terrestrial and maritime long-distance trade.

The prehistory of the region can be divided into distinct chronological periods that are characterized by changing adaptations to the environment and associated changes in material culture and settlement patterns.

Paleoindian Period

This period represents the earliest time that a human presence in the region can be firmly documented. In the northern Channel Islands, two sites have been discovered that appear to date from this period. Radiocarbon dates place humans on the Channel Islands by at least 9750 B.C., and possibly earlier.

The Milling Stone Horizon

In Southern California, the Milling Stone Period, which is also called the Milling Stone Culture, extends to at least 6,000 years before present (B.P.) and probably as far back to 8500 + B.P. (cf. Warren 1968; Wallace 1955). Overall, subsistence at this time was based on plant collecting but was supplemented by fishing and hunting. The Milling Stone Horizon is typified by large, heavy ground stone milling tools, such as deep basin metates and wedge-shaped manos, and large core/cobble choppers and scrapers (Dillon 1990:8). Along Santa Barbara coastal areas, Milling Stone sites are common on terraces and knolls, typically set back from the current coastline (Glassow et al. 1988: 68, in Erlandson 1994:46). The larger sites usually contain extensive midden deposits, possible subterranean house pits, and cemeteries (Erlandson 1994:46). Such sites have been found in the Gaviota Creek area, in close proximity to the ocean.

The Intermediate Period

This period has also been called the "Hunting Period" or the "Middle Horizon." About 5,000 years ago, the Milling Stone traditions, characterized by a heavy reliance on plant food sources, began to shift to land animal and marine resources. Mortars and pestles predominate in the archaeological sites. Some researchers have suggested that in the Santa Barbara geographic setting, this could also reflect a greater use of acorns at this time. Archaeological evidence suggests that the area near Gaviota Creek was occupied during this period.

The Late Prehistoric Period

This period probably began sometime around 2,000 years ago and expanded with the introduction of the bow and arrow. The end of the period is recognized as the end of the 18th century, when the effects of the full implementation of the Spanish mission system took their toll on the native populations. The Santa Barbara coastal areas, along with the western areas of the Los Angeles Basin, were occupied during the Late Prehistoric Period by the so-called Canaliño culture (Rogers 1929). Coastal populations expanded greatly during this period,

probably taking advantage of a wide variety of ecological niches, especially marine resources. Small projectile points, basketry, ollas or large water vessels, shell and stone beads, and shell and bone fish hooks appear, as does elaborate rock painting. Anthropologists surmise that the Chumash are directly descended from the Canaliño culture of the archaeological record. During this period, populations increased, permanent settlements appeared, and a currency-based economy based on the shell trade was developed.

3.8.1.2 Ethnography

The following summary discussion has been synthesized partially from Dillon (1990), Moratto (1984), and Grant (1978a, 1978b).

The Spanish first encountered the Chumash in 1542 and then again in 1602, when Vizcaíno entered the Santa Barbara Channel (Grant 1978a:505). The pre-European contact Chumash probably had between 10,000 and 15,000 individuals. Anthropologists and linguists note that the Hokan language stock of the Chumash appears to be one of the oldest language groups in California, suggesting that Chumash ancestors must have been present in the area for at least several thousand years prior to European contact.

At the time of contact, the Chumash ranged from San Luis Obispo to Malibu Canyon along the coast, inland as far as the southwestern margin of the southern San Joaquin Valley, and out to the Channel Islands. There were at least six Chumash languages. The project area is located within the ethnographic boundaries of the coastal Barbareño Chumash.

The Chumash were incorporated rather quickly into the Spanish mission system. This precipitated the rapid destruction of their native culture and language, and by the time anthropologists started to interview Chumash individuals, most of their traditional culture had long since disappeared. However, the early Spanish travelers provided valuable details concerning Chumash lifeways. The Chumash had a high level of material culture and craftsmanship, including intricate basketry, woodcarving, fine stone objects, well-developed rock art, and excellent ocean-going plank canoes *(tomol)* that highly impressed Spanish explorers. The Coastal Chumash had an extensive trading network that reached well beyond the Santa Barbara Channel region. Most Chumash lived in permanent villages, composed of large round houses. Coastal Chumash village sites were often located at the mouths of creeks and rivers, usually on higher ground just above the shoreline (Grant 1978b:510). Smaller hunting camps and resource exploitation sites were located in smaller perennial creek areas, in the upper elevations, and in the immediate interior (Landberg 1965:89).

One Chumash village site, identified in various sources as “Anawupu,” “Anawpe,” “Onomyo,” and “Nomgio,” was located at the mouth of Gaviota Creek, just atop the western bluff (Grant 1978b:509; McLendon and Johnson 1999:31).

3.8.1.3 History

The first known European entry into the area was the expedition of Juan Cabrillo who sailed north up the California coast from Mexico in 1542. A second Spanish expedition arrived in the area in 1602. This expedition consisted of two ships under the command of Sebastian Vizcaino. In the 1760s, the Spanish government decided to establish a series of presidios and missions

along the California coast. The establishment of missions by the Spanish in Santa Barbara and at La Purissima near Lompoc had a strong effect on the Chumash at Onomyo (Chesnut 1993).

When Mexico gained its independence from Spain in 1821, the project area became part of the new country. With independence, the Mexican government began a process of secularization of mission properties that was concluded in 1833. In 1848 California was ceded by Mexico to the United States by the Treaty of Guadalupe-Hidalgo. During the late 1840s to early 1850s, two Anglo-American families, the Hollisters and the Dibblees, moved into the area. The Hollisters and the Dibblees acquired all of the land around the Gaviota area including Rancho San Julian and the Nuestra Senora del Refugio grant. To aid the shipment of cattle, fleeces, and hides from their successful ranching operation, the partners decided to build a wharf at Gaviota in 1875 (Poett 1990). Soon the partners were handling the shipment of grain, wool, mutton, and other merchandise from throughout the area. Most of this was shipped to San Francisco, where it could be shipped east by rail. Passengers also embarked from the wharf, and Miquel Burke eventually built an inn and store at the location. The wharf operation became obsolete with the construction of the Southern Pacific Railroad through the area in 1901.

The original house built by Miquel Burke became known as the Gaviota Adobe and was occupied by a series of tenants that were employees of the ranch. An 1897 map of the area on file with the Santa Barbara Historical Society (Poett 1897) shows the adobe and two other structures east of the road with the notation "McNealy," indicating that the Henry McNealy family was still there. The Ben Chaves family was living in the adobe when the earthquake of 1925 occurred. This severe earthquake destroyed much of downtown Santa Barbara, and the Gaviota Adobe was destroyed as well (Chesnut 1993:176).

The Hollister Ranch built another house farther south, just north of the creek. According to Chesnut (1993:175-177), this house site is adjacent to the palm tree currently visible near the road. Its first occupant was the family of Luis Ochoa, who planted the tree to the rear of the house. The new house was a two-bedroom L-shaped house facing the beach with associated barn and garage. The house was built on pilings to avoid damage from frequent flooding in the area. These structures were occupied by a series of tenants until the property became part of the Park in 1969, whereupon it was torn down.

Santa Barbara County purchased the beachfront and original wharf location from the Honolulu Consolidated Oil Company in 1926. From that time forward, the County operated this land as a County park. As part of an effort to increase the recreational potential of the park, a new wharf was built in 1951.

3.8.1.4 Contemporary Native American Concerns

The NAHC was contacted on May 28, 2002, for a review of its Sacred Lands Files and a list of individuals or groups who should be contacted as potential information sources for the project area. The NAHC responded on May 31, 2002, with a negative search of its Sacred Lands Files. An informational letter was transmitted on August 1, 2002, to the 18 interested parties identified by the NAHC. To date, one response has been received regarding this letter. This individual requested a copy of the May 31, 2002, letter from the NAHC and a copy of the distribution list of contacts, but did not offer any information about the project area. Copies of the requested documents were sent to the individual on August 19, 2002. The correspondence and

communications related to this consultation are included in Appendix B of the confidential cultural resources technical report for the project (NISTAC 2003).

3.8.1.5 Previous Surveys and Previously Recorded Sites

Three prior cultural resource surveys have been conducted within or adjacent to the project area according to the records of the Central Coastal Information Center of the California Historical Resources Information System. The three surveys are as follows:

- **Celeron/All American Pipeline Project (E-594).** This survey was a linear corridor survey through the northern section of the project Area of Potential Effects (APE). In the area of Gaviota, the report indicates one historic site, one isolated find, and archival information for a historic site not identified in the field.
- **PCS Wireless Communications (E-2721 and E-2723).** Two surveys were recorded for two separate actions. One survey was located east of the project area and adjacent to Highway 101. This archaeological survey report documents findings for a proposed cell tower installation for Sprint Spectrum's Personal Communications Services (PCS) Wireless Telecommunications Network. The findings of the survey conclude that construction at that site would be within the boundaries of a property potentially eligible for listing in the National Register of Historic Places, namely the Max C. Fleischmann Polo Fields. The second, related survey was also located outside of the proposed project area and was immediately adjacent to Highway 101. No cultural resources were encountered as part of that survey.

Previously located archaeological sites are described below. Because the archeological data are confidential, the exact locational information for these sites cannot be provided. These data are only available to qualified cultural resource specialists, project managers, members of the Native American community, or other pertinent individuals on a need-to-know basis.

Site CA-SBA-96

This prehistoric site was originally noted by Rogers (1929) as Gaviota #2 and re-recorded by archaeologists from State Parks in 1989. CA-SBA-96 is described as a midden site containing lithic and shell scatters, including chert pressure and percussion flakes and cores, red ochre, mano fragments, a pestle, hammerstones, and a unifacial scraper as well as fragments from Tivela, Acmea, Polinices, Chione, Haliotis, and Saxidomus shells. The site was apparently disturbed by the construction of the old and the new Highway 101 at the north/central section of the site, four pipes running through different sections of the site, and the extensive disturbances in the areas of individual utility poles. The site update states that in general the site retains a high level of integrity and that recent radiocarbon dates attributed to the site range from 5,500 to 7,500 years B.P. The site is located outside of the area of direct and indirect effect of the project.

Site CA-SBA-97

Rogers originally noted this site as Gaviota #1. It was first formally recorded in 1977 and re-recorded in 1986. This site has been bisected by railroad tracks. The site covers an area 300 meters by 100 meters and consists of forty banded light and dark Monterey chert flakes, two worked chert flakes, and one projectile point fragment of light green chert. Faunal remains

consist of shellfish, *Mytilus californianus* (mussel), in the midden with *Odocoileus* sp. (mule deer) and *Sylvilagus* sp. (eastern cottontail rabbit) near the site. The site has been disturbed by the construction of the railroad and a parking lot, and looters may have vandalized the site through unauthorized excavation. Rogers identified a late Canaliño occupation at the site. The Canaliño are identified in the archaeological record as the precursor to the Chumash, though later there was possibly a historical Chumash village at the same location. The site is located outside of the area of direct and indirect effect of the project.

Site CA-SBA-1100

The prehistoric deposit recorded at this site may be an extension of CA-SBA-96, given its proximity to CA-SBA-96. The site is described as being 200 feet east/west by 30 feet north/south and reaching a depth of over 36 inches. The soil is described as dark brown and sandy. Artifacts consist of half of a small silicate projectile point, many chert flakes of varying sizes, one Tivela shell fragment, one Acmea shell fragment, a small number of unidentified shell fragments, and a burned *Pinniped* (seal/sea lion/walrus) canine tooth. The site is located outside the area of direct and indirect effect of the project.

Site CA-SBA-2484H (Historic Fence Line)

This site was originally recorded in 1986 in association the Celeron/All-American Pipeline project. At that time, the historic site was reported to contain barbed wire (four bales of two types of wire: three-barb double wire and two-barb wire), nine 2-inch-by-6-inch tongue and groove boards with modern nails, and twenty-two 6-inch-by-6-inch posts with modern nails and barbed wire. The original recorder indicated some boards and barbed wire appear to have been salvaged from earlier nineteenth-century structures. Other designations for this site include "Historic Fence Line" and CE-002-12. This site is located within the area of direct and indirect effect of the project.

Site CA-SBA-2485H (Gaviota or Pepper's Adobe)

The exact location of this site, which was also researched as part of the Celeron/All-American Pipeline project, was not confirmed in the field. Recorded on the basis of archival data in 1985, the site supposedly contained two houses, a chicken coup, a barn, and associated corrals and fences. All features associated with this site were surmised by the original researchers from a 1933 California State Highway map, a 1934 construction map, and Greenwale's 1871 map of Santa Barbara County (noted in the 1985 site record). Previous designations for the site are "Pepper's Adobe" and CE-002-8. The plotted location for this site indicates that it is within the footprint of modern Highway 101. The site is located outside of the area of direct and indirect effect of the project.

Site CA-SBA-ISO-353H

This site is an isolate find recorded in 1986 as part of the Celeron/All-American Pipeline project. The feature consists of a cement conduit built in 1931, which parallels a creek bed under old Highway 101. Another designation for this site is IO-CE-002-8. The plotted location for this site

indicates that it is within the footprint of modern Highway 101. The find is located outside of the area of direct and indirect effect of the project.

3.8.1.6 Newly Recorded and Re-recorded Sites by NISTAC

An archaeological survey of the APE and a larger area described by Parks as an area of indirect effects was conducted on October 21 and 22, 2002, by NISTAC archaeologists.

Sites CA-SBA-96, 97, and 1100

The three prehistoric sites described above, CA-SBA-96, -97, and -1100 were inspected during the NISTAC survey. Each of these sites is located outside of the APE.

Site GC-01

This previously unrecorded historic feature consists of a cylindrical steel water tank approximately 8 feet tall and 15 feet in diameter with associated ruined small wooden structures that are surmised to be pump houses. Graffiti scratched into the water tank dates to the early 1970s. Other features include electrical utility poles and fuse boxes. A scatter of historical trash and two steel trash dumpsters set on their sides with rebar grids welded to their tops are located approximately 165 feet north of the water tank. The site is located adjacent to the APE for the temporary detour road.

The site is located approximately 230 feet southeast of the palm tree marking the location of the ranch house built in 1926. This house was razed after the acquisition of the property by the state in 1969. It is probable that the facilities at GC-01 were associated with the late period of occupation at the tenant house. Site GC-01 does not appear to be eligible for inclusion on the National Register of Historic Places (NRHP) under any of the four evaluation criteria (36 CFR 60). Were the remains still in association with an intact tenant house, they might have been eligible under Criterion A or Criterion C, but in their present condition they lack the integrity of their original setting and design. Furthermore, they are non-unique resources and any data potential they possess has been preserved through mapping, recordation, and archival research.

Site CA-SBA-2484H (Historic Fence Line)

As noted in Section 3.8.1.3, the owners of the Hollister Ranch built a house just north of Gaviota Creek. According to Chesnut (1993:175–177), this house site was adjacent to the palm tree currently visible near the road within the area of direct and indirect effect. The house was built on pilings to avoid damage from frequent flooding in the area. These structures were occupied by a series of tenants until the property became part of the Park in 1969, whereupon the structures were razed. The fence remnant CA-SBA-2484H may be associated with this house. Other than the palm tree, no evidence of the tenant house was observed during the NISTAC field survey. It appears that all traces of this site were destroyed at some time in the past.

The fence remnant, CA-SBA-2484H was re-recorded as part of the NISTAC survey for the proposed project on October 22, 2002, by Brian W. Hatoff. Discrepancies with the original site record are rectified (specifically, the location of the historical fence line). The bales of barbed wire reported in the 1986 site record were not observed. The site as originally described in the

1986 site record is depicted as "…posts and boards with modern nails… the boards appear to have been salvaged from an earlier structure…." The re-recordation of this site supports the earlier description of the feature as being composed of an admixture of variously aged materials that appear to have been salvaged. Most likely this fence was constructed in the 1960s during the terminal stages of the use of the house described above.

3.8.1.7 Newly Recorded and Re-recorded Sites by State Parks

State Parks conducted an extended Phase I archaeological survey of a portion of the Park (Bischoff and Dallas 2005) for the proposed parking lot of the Coastal Trail, a project to be implemented by State Parks. The APE for the parking lot coincides with a portion of the temporary detour road for this project. The results of the State Parks study are summarized below.

Site CGT-1

During archaeological investigations of a portion of the project site at Gaviota State Beach in 2004, State Parks (Bischoff and Dallas 2005) identified a new archaeological site. The prehistoric archaeological site is located outside of the APE.

Site CA-SBA-2484H (Redefined)

Based on the subsurface testing results from the 2005 investigations, State Parks personnel reconfigured the boundary of CA-SBA-2484H to encompass a larger area, including the two sites identified by NISTAC: CA-SBA-2484H (Historic Fence Line) and GC-O1 (see above). It appears that a small residence was constructed at the site in the 1920s as part of the Hollister Estate. The house was expanded over time and occupied several different families. The house was acquired by State Parks in the 1960s when the Park was established and was removed in the 1970s. No buildings remain at the site, but there is considerable debris and rubble. The site was originally described in 1986 as a fence feature. NISTAC identified other elements of the site as GC-01 during their 2002 survey. State Parks determined that all of these features were part of one historic site.

To determine if intact historic artifacts are present below the ground surface, State Parks excavated nine 2-foot-by-2-foot shovel test pits (Bischoff and Dallas 2005). Six of the pits were sterile of any cultural materials. Three pits contained glass, metal, and porcelain. State Parks observed that the top 36 inches of the site consist of flood-deposited sediments that are sterile of cultural materials. State Parks concluded that the deposits in the upper soil did not represent intact historic artifacts; rather, the deposits were scattered refuse.

3.8.2 Potential Impacts – No Action Alternative

No impacts to cultural resources would occur under this alternative.

3.8.3 Potential Impacts – Proposed Action

Only one archeological site occurs in the APE of the proposed action: Site CA-SBA-2484H, as redefined by State Parks (Bischoff and Dallas 2005). The proposed temporary detour road would

traverse a portion of the historic site. As described earlier, State Parks did not find any cultural material in the upper soil of this site; but it is not known whether any intact historic artifacts are present below 36 inches. The temporary detour road would involve the placement and removal of fill and asphalt through a portion of the site. To avoid direct impacts to intact deposits at this site, if present, the County would implement Environmental Protection Measure C-1. This measure requires that the portion of the detour road within the boundaries of the historic site be constructed by placing a fabric filter on the route (after clearing vegetation by hand) and then placing fill for the temporary road. No excavation or surface grading of more than 1 foot below existing grade would be allowed when installing and removing the detour road corridor within the boundary of the site. An archeological monitor would also be present during the road construction and removal within the boundaries of the site.

Construction of the eastern edge of the new roadway approach would slightly encroach into the boundaries of CA-SBA-2484H. The County would provide an archaeological monitoring when work is occurring in the site boundary. Also, the County would implement Environmental Protection Measure C-2 to reduce impacts, if any, to the site. This measure specifies the procedures to follow in the event that an unexpected artifact or deposit is encountered.

Compliance with Section 106 of the National Historic Preservation Act

In addition to review under NEPA, consideration of impacts to cultural resources is mandated under Section 106 of the National Historic Preservation Act (NHPA). Requirements include identifying significant historic properties and districts that may be affected by a federal undertaking and mitigating adverse effects to those resources.

NISTAC conducted a pedestrian archaeological reconnaissance of the APE and vicinity on October 21 and 22, 2002. As noted above and documented in the Archaeological Survey Report for the Gaviota Bridge Replacement Project, only sites GC-01 and CA-SBA-2484H are within the APE. In a letter dated April 14, 2003, to the SHPO, FEMA submitted the Archaeological Survey Report for the Gaviota Bridge Replacement Project, which included an assessment of CA-SBA-2484H. FEMA concluded that these sites did not exhibit any qualities that would qualify them for inclusion in the NRHP. The SHPO concurred with this determination in a letter to FEMA dated May 15, 2003.

In May 2005, FEMA submitted another letter to the SHPO asking for concurrence with this earlier conclusion in light of the new data from State Parks (Bischoff and Dallas 2005). In June 2005, the SHPO provided a concurrence letter to FEMA. This correspondence is included in Appendix B. Therefore, the proposed action is in compliance with Section 106 of the NHPA.

If unanticipated resources are discovered during construction, the County would stop project activities in the vicinity of the discovery, take all reasonable measures to avoid or minimize harm to the property, and notify FEMA as soon as practicable so that FEMA can re-initiate consultation with the SHPO, in accordance with the Programmatic Agreement among FEMA, SHPO, OES, and the Advisory Council on Historic Preservation. If human remains are discovered during the project, the specific protocol, guidelines, and channels of communication outlined by the NAHC and that accord with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) would be followed. Section 7050.5(c) would guide the potential Native American involvement in the event that human remains are

discovered, at the direction of the County Coroner. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she would contact the NAHC by telephone within 24 hours.

3.8.4 Potential Impacts – Alternative Alignments

For the Westerly Alignment, impacts to the historic archaeological site CA-SBA-2484H would be the same as for the proposed action. Impacts to this site would be greater for the Easterly Alignment because it would involve placement of the permanent roadway embankment in the site boundary. Construction of the embankment would require excavation of the site below 36 inches to prepare the subgrade.

3.8.5 Potential Impacts – Causeway Alternative

This alternative would have the same impacts on the historic archeological site as the proposed action because the temporary detour road would have the same location.

3.8.6 Potential Impacts – Alternative Bridge Site

This alternative would avoid impacts on historic archeological site CA-SBA-2484H because the temporary detour road would not be required. However, Road 28 would be widened and a larger intersection created at the juncture of Road 28 and Hollister Ranch Road. This intersection is located within the boundaries of prehistoric archaeological site CA-SBA-97.

NEPA requires that an EA address the direct, indirect, and cumulative impacts of a proposed action. "Cumulative impact" is defined under the NEPA regulations (Section 1508.7) as the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The federal Council of Environmental Quality (1997) has provided guidance on how to address cumulative impacts under NEPA. The approach involves the following steps: (1) identify the significant cumulative effects issues associated with the proposed action, define the assessment goals, and establish the geographic scope for the analysis; (2) identify other actions affecting the environment; (3) characterize other impacts affecting these resources; and (4) determine the magnitude and significance of the cumulative effects. This approach is used below to assess the potential cumulative impacts of the proposed action.

The only known project that is proposed at or in proximity to the Park is a segment of the coastal trail. The cumulative impacts of this project with the proposed road and bridge project are described below.

State Parks is planning to construct a segment of the coastal trail that would extend from Gaviota Beach Road to the Mariposa Road Interchange along Highway 101 at the eastern end of the Park. State Parks is currently preparing an EIR for the project; no information is available from State Parks concerning the precise trail layout, the construction requirements, or the timing of the project. The project will include a trailhead and small parking lot along Gaviota Beach Road near the entrance to the Park. The size of the parking lot and the nature of the surface materials are unknown at this time. The parking lot will include stalls for horse trailers. A bike/pedestrian and equestrian trail will be constructed. The trail will traverse the hills above the Park campground and day use area, immediately south of Highway 101.

The proposed parking lot and trailhead would be located along the temporary detour road. The County assumes that State Parks will construct the coastal trail after the completion of the proposed bridge project because the coastal trail project is not currently funded.

The proposed trail project would result in the following impacts:

- Temporary and permanent removal of the upland and riparian habitat traversed by the trail
- Potential erosion and sedimentation due to the construction of trails on steep hillsides and possible landslide hazards
- Potential adverse impacts of the parking lot on the underlying historic archaeological site
- Potential water quality impacts due to the horse trail and the parking of horse trailers in the floodplain
- Potential impact on the visual qualities of the Park as a result of the creation of a new parking lot along the tree-lined road and the creation of visual scars from cut slopes along the trail that traverses the hillside above the campsite and day use area

No cumulative impacts are expected to occur due to the proposed bridge project and the proposed trail project for the following reasons:

- The projects would be constructed at different times, so there would be no overlap in construction activities, which can cause noise, air quality, traffic, and erosion (water quality) impacts
- The proposed action would result in impacts to riparian and wetland habitats, as would the proposed coastal trail. However, the restoration of temporarily disturbed areas and the restoration of new riparian habitat for the permanent impacts of the proposed bridge project would be completed prior to the beginning of the coastal trail project. Hence, the two projects would not cause simultaneous habitat disturbances. It is assumed that State Parks will restore habitat to mitigate for temporary and permanent disturbance to riparian habitat for the coastal trail project.
- State Parks completed an investigation of the historic archaeological site at the location of the proposed parking lot and determined that the proposed project would not affect any intact archaeological materials, apparently because the proposed parking lot would not require any excavation or compaction of soils. Hence, neither the bridge nor the trail project would adversely affect this site.
- The proposed bridge project would not affect equestrian uses at the Park. Hence, the potential adverse effects of expanded equestrian uses due to the proposed parking lot and trail would be restricted to the State Parks project and would not be a cumulative impact resulting from two projects.
- The proposed action would reduce the visual impacts of the new roadway on Park users by installing riparian vegetation along both embankments. The riparian vegetation would be designed to screen the road from viewers in the Park and to create a tree-lined roadway over time that is similar to current conditions. The proposed parking lot and connection to Gaviota Beach Road would remove about 200 feet of the landscaping along the eastern road embankment. This would expose the parking lot with horse trailers to travelers on the road and possibly increase the visibility of the road to users in the center of the Park. This impact is a project-specific effect of the coast trail project, and is not considered a cumulative impact.

Nationwide Infrastructure Support Technical Assistance Consultants (NISTAC)

John Gray, Project Manager ..... Endangered Species, Wetlands, Water Quality, Floodplains
Yvonne Marlin ..... Rare Plants, Vegetation
Johanna Laclaire ..... Biology, Wetlands, Aquatic Species, Rare Plants
David Kisner ..... Avian Resources
Vince Semonsen ..... Reptiles
Bryon Bass ..... Cultural Resources
Brian Hatoff ..... Cultural Resources
Autumn Mckee ..... General Environmental
Michael Greene ..... Noise

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